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<210>2

<211>251

<212>PRT

<213>Chlamydia pneumoniae

<400>2

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Met Arg Ile Lys Phe Arg Glu Asn Lys Glu Arg Lys Met Thr Arg Gln
  1              5              10              15
Ser Tyr Val Leu Gly Asn Trp Lys Met His Lys Thr Ile Gln Glu Ala
              20              25              30
Lys Glu Tyr Val Gln Thr Leu Ala Ser Xaa Leu Gln Gly Glu Pro Leu
              35              40              45
Ser Cys Thr Ile Gly Ile Ala Ser Pro Phe Thr Ser Leu Arg Ala Ile
              50              55              60
His Glu Met Ile Asn Thr Thr Gly Ala Phe Leu Trp Leu Gly Ala Gln
              65              70              75              80
Asn Val His Pro Glu Leu Ser Gly Ala Phe Thr Gly Glu Ile Ser Leu
              85              90              95
Pro Met Leu Lys Glu Val Gly Val Glu Phe Val Leu Val Gly His Ser
              100             105             110
Glu Arg Arg His Ile Phe Gly Glu Ser Asp Ala Phe Ile Ala Ser Lys
              115             120             125
Val Lys Ser Val Ala Gln Ala Gly Leu Val Pro Val Leu Cys Val Gly
              130             135             140
Glu Ser Leu Glu Val Arg Glu Glu Gly Lys Ala His Gln Val Ile Lys
              145             150             155             160
Lys Gln Leu Leu Leu Gly Leu Glu Gln Met Asp Asn Gly Ser Glu Phe
              165             170             175
Leu Ile Ala Tyr Glu Pro Val Trp Ala Ile Gly Thr Gly Lys Val Ala
              180             185             190
Glu Ala Ser Asp Val Gln Asp Ile His Met Phe Cys Arg Glu Val Val
              195             200             205

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Ala Glu Arg Phe Ser Glu Ala Thr Ala Glu Glu Ile Ser Ile Leu Tyr
 210 215 220
 Gly Gly Ser Val Lys Val Asp Asn Ala Gln Arg Phe Gly Gln Cys Ser
 225 230 235 240
 Asp Val Asp Gly Leu Leu Val Gly Gly Xaa Leu
 245 250

<210>3

<211>119

<212>PRT

<213>Chlamydia pneumoniae

<400>3

Ser Met Ser Leu Asn Lys Glu Ile Gly Met Thr Val Leu Phe Tyr Ala
 1 5 10 15
 Phe Leu Phe Ile Phe Leu Phe Leu Cys Val Ile Leu Cys Gly Leu Ile
 20 25 30
 Leu Val Gln Glu Ser Lys Ser Met Gly Leu Gly Ser Ser Phe Gly Val
 35 40 45
 Asp Ser Gly Asp Ser Val Phe Gly Val Ser Thr Pro Asp Ile Leu Lys
 50 55 60
 Lys Val Thr Ser Xaa Cys Ala Val Ala Phe Cys Ile Gly Cys Leu Leu
 65 70 75 80
 Leu Ser Phe Ser Thr Asn Leu Leu Gly Lys Lys Leu Asp Ala Lys Glu
 85 90 95
 Phe Leu Leu Pro Ala Ala Glu Glu Ser Asp Thr Gln Ala Ser Ser Glu
 100 105 110
 Ser Val Glu Ala Asp Glu Ser
 115

<210>4

<211>204

<212>PRT

<213>Chlamydia pneumoniae

<400>4

Val Leu Val Val Arg Asp Phe Phe Thr Glu Leu Cys Gln Ala His Val
 1 5 10 15
 Gln Thr Met Ile Arg Arg Leu Glu Tyr Tyr Gly Ser Pro Ile Leu Arg
 20 25 30
 Lys Lys Ser Ser Pro Ile Ala Glu Ile Thr Asp Glu Ile Arg Asn Leu
 35 40 45
 Val Ser Asp Met Cys Asp Thr Met Glu Ala His Arg Gly Val Gly Leu
 50 55 60
 Ala Ala Pro Gln Val Gly Lys Asn Val Ser Leu Phe Val Met Cys Val
 65 70 75 80
 Asp Arg Glu Thr Glu Asp Gly Glu Leu Ile Phe Ser Glu Ser Pro Arg
 85 90 95
 Val Phe Ile Asn Pro Val Leu Ser Asp Pro Ser Glu Thr Pro Ile Ile
 100 105 110
 Gly Lys Glu Gly Cys Leu Ser Ile Pro Gly Leu Arg Gly Glu Val Phe
 115 120 125
 Arg Pro Gln Lys Ile Thr Val Thr Ala Met Asp Leu Asn Gly Lys Ile
 130 135 140
 Phe Thr Glu His Leu Glu Gly Phe Thr Ala Arg Ile Ile Met His Glu
 145 150 155 160
 Thr Asp His Leu Asn Gly Val Leu Tyr Ile Asp Leu Met Glu Glu Pro
 165 170 175
 Lys Asp Pro Lys Lys Phe Lys Ala Ser Leu Glu Lys Ile Lys Arg Arg
 180 185 190
 Tyr Asn Thr His Leu Ser Lys Glu Glu Leu Val Ser
 195 200

<210>5

<211>301

<212>PRT

<213>Chlamydia pneumoniae

<400>5

Met Ser Cys Met Pro Pro Pro Phe Val Val Thr Leu Thr Thr Ser Ala

1 5 10 15
 Gln Asn Asn Leu Arg Asp Gln Leu Lys Glu Lys Asn Phe Ile Phe Ser
 20 25 30
 Gln Pro Gln Asn Thr Val Phe Gln Ala Arg Ser Asn Thr Val Thr Cys
 35 40 45
 Thr Leu Tyr Pro Ser Gly Lys Leu Val Ile Gln Gly Lys Gly Ser Glu
 50 55 60
 Glu Phe Ile Glu Phe Phe Leu Glu Pro Glu Ile Leu His Thr Phe Thr
 65 70 75 80
 His Ala Arg Val Glu Gln Asp Leu Arg Pro Arg Leu Gly Val Asp Glu
 85 90 95
 Ser Gly Lys Gly Asp Phe Phe Gly Pro Leu Cys Ile Ala Ala Val Tyr
 100 105 110
 Ala Ser Asn Ala Glu Ile Leu Lys Lys Leu Tyr Glu Asn Lys Val Gln
 115 120 125
 Asp Ser Lys Asn Leu Lys Asp Thr Lys Ile Ala Ser Leu Ala Arg Ile
 130 135 140
 Ile Arg Ser Leu Cys Val Cys Asp Val Ile Ile Leu Tyr Pro Glu Lys
 145 150 155 160
 Tyr Asn Glu Leu Tyr Gly Lys Phe Gln Asn Leu Asn Thr Leu Leu Ala
 165 170 175
 Trp Ala His Ala Thr Val Ile Asn Asn Leu Ala Pro Lys Pro Ala Gly
 180 185 190
 Asp Val Phe Ala Ile Ser Asp Gln Phe Ala Ala Ser Glu Tyr Thr Leu
 195 200 205
 Leu Lys Ala Leu Gln Lys Lys Glu Thr Asp Ile Thr Leu Ile Gln Lys
 210 215 220
 Pro Arg Ala Glu Gln Asp Val Val Val Ala Ala Ser Ile Leu Ala
 225 230 235 240
 Arg Asp Ala Phe Val Gln Ser Ile Gln Lys Leu Glu Glu Gln Tyr Gln
 245 250 255
 Val Gln Leu Pro Lys Gly Ala Gly Phe Asn Val Lys Ala Ala Gly Arg
 260 265 270
 Glu Ile Ala Lys Gln Arg Gly Lys Glu Leu Leu Ala Lys Ile Ser Lys
 275 280 285
 Thr His Phe Lys Thr Phe Asp Glu Ile Cys Ser Gly Lys
 290 295 300

<210>6

<211>143

<212>PRT

<213>Chlamydia pneumoniae

<400>6

Met Gln Glu His Ile His Lys Glu Leu Leu His Leu Gly Glu Ile Phe
 1 5 10 15
 Arg Ser Ser Arg Glu Ser Gln Ser Leu Ser Leu Lys Asp Val Glu Ala
 20 25 30
 Ala Thr Ser Ile Arg Tyr Ser Cys Leu Glu Ala Ile Glu Gln Gly Cys
 35 40 45
 Leu Gly Lys Leu Ile Ser Pro Val Tyr Ala Gln Gly Phe Ile Lys Lys
 50 55 60
 Tyr Ala Thr Tyr Leu Gly Leu Asp Gly Asp Ser Ile Leu Gln Glu His
 65 70 75 80
 Pro Tyr Val Met Lys Ile Phe Lys Glu Phe Ser Asp His Asn Met Glu
 85 90 95
 Met Leu Leu Asp Leu Glu Ser Met Gly Gly Arg Asn Ser Pro Glu Arg
 100 105 110
 Ala Ile His Ser Trp Ser Asn Leu Trp Trp Ala Gly Leu Ile Ile Ile
 115 120 125
 Gly Gly Ile Met Val Trp Trp Leu Gly Ser Leu Phe Ser Ile Phe
 130 135 140

<210>7

<211>460

<212>PRT

<213>Chlamydia pneumoniae

<400>7

Arg Arg Ser Leu Met Thr Phe Pro Cys Gly Asn Cys Asn Cys Tyr Tyr
 1 5 10 15
 Arg Glu Thr Pro Pro Pro Asn Pro Gly Gly Glu Asp Ile Pro Leu Gln
 20 25 30
 Glu Gly Gly Gln Ser Gly Ser Gln Gly Gly Arg Val Ile Thr Gln Gln
 35 40 45
 Pro Gly Thr Gly Gly Arg Glu Met Gly Ile Ser Leu Gly Ser Asp Asn
 50 55 60
 Val Leu Gly Met Val Glu Gln Ala Gly Ser Leu Leu Asn Asn Leu Leu
 65 70 75 80
 Asp Ser Ala Arg Met Gln Arg Leu Gly His Tyr Cys Tyr Arg Thr Gly
 85 90 95
 Thr Pro Trp Cys Arg Glu His Cys Pro Gly Phe Leu Gln Trp Ile Trp
 100 105 110
 Gly Gly Cys Cys Ala Cys Cys Leu Glu Thr Val Asp Asp Pro Asp Asn
 115 120 125
 Pro Ser Ala Gln Phe Leu Gln Gln Leu Ile Gln Gln Tyr Gly Pro Ile
 130 135 140
 Cys Val Gly Met Ser Phe Gln Gln Leu Pro His Cys Thr Gln Lys Ile
 145 150 155 160
 Glu Gln Gly Glu Pro Leu Gly Asp Gly Asp Lys Gln Glu Val Glu Asn
 165 170 175
 Gly Cys Lys Leu His Arg Glu Leu Leu Lys Ala Ala Gln Pro Arg Cys
 180 185 190
 Met Gly Glu Ser Leu Val Lys Leu Leu Gln Asn Asn Gly Leu Gly Glu
 195 200 205
 Asp Met Gln Gln Thr Pro Pro Trp Ser Leu Ile Leu Gln Ala Val Ser
 210 215 220
 Glu Gly Ala Leu Ser Phe Val Thr Ser Ser Asp Asn Pro Pro Thr Cys
 225 230 235 240
 Trp Ile Leu Gln Pro Glu Gln Gln Pro Cys Pro Pro Pro Pro Thr Asp
 245 250 255
 Glu Glu Gln Leu Gln Gly Ala Val Gly Gly Ala Pro Ala Pro Gln Gln
 260 265 270
 Lys Lys His Pro Ala Gln Glu Cys Arg Val Thr Cys Lys Leu Asn Phe
 275 280 285
 Arg Thr Leu Leu Gln Lys Leu Ser Arg Leu Glu Val Leu Ser Leu Glu
 290 295 300
 Ser Gly Tyr Lys Gly Pro Leu Gly Gln Ala Ala Lys Gln Ile Val Asp
 305 310 315 320
 Leu Ile Lys Lys Ser Leu Lys Arg Leu Val Ala Ser Asp Leu Ala Thr
 325 330 335
 Phe Leu Gly Pro Gly Ile Gly Leu Ser Leu Glu Ser Gln Val Phe Glu
 340 345 350
 Val Leu Val Leu Leu Cys Leu Leu Ser Lys Gly Tyr Leu Pro Leu Asp
 355 360 365
 Pro Leu His Pro Glu Gln Thr Val Leu Asp Pro Arg Val Gln Gly Pro
 370 375 380
 Trp Gln Arg Ile Leu Arg Lys Val Leu Val Thr Thr Thr Ala Gly Glu
 385 390 395 400
 Asn Ile Trp Arg Gln Thr Gln Gly Glu Ala Pro Arg Gln Ala Pro Pro
 405 410 415
 Pro Pro Asp Pro Trp Asp Asp Asp Glu Ile Glu Arg Asp Gly Ile Val
 420 425 430
 Thr Gly Gly Gly Phe Gly Ile Pro Cys Gln Cys Leu Arg Cys Trp Arg
 435 440 445
 Lys Leu Pro Thr Glu Lys Arg Pro Asn Arg Trp Leu
 450 455 460

<210>8

<211>484

<212>PRT

<213>Chlamydia pneumoniae

<400>8

Lys Gly Thr Thr Met Val Cys Pro Asn Asn Ser Trp Phe Arg Met Cys
 1 5 10 15
 Gly Asn Phe Asn Cys Glu Trp Val Glu Val Thr Thr Thr Glu Thr
 20 25 30
 Thr Arg Gln Ser Ala Ser Asp Ile Ser Glu Glu Ala Gly Ser Ser Gly
 35 40 45
 Gly Ala Ala Pro Ile Thr Thr Gln Pro Thr Lys Ile Thr Lys Val Glu
 50 55 60
 Lys Arg Val Gln Phe Asn Thr Ala Gln Gly Asp Glu Ser Thr Ile His
 65 70 75 80
 Met Ile Gln Glu Ala Gly Glu Leu Val Asp Ser Ile Leu Ser His Arg
 85 90 95
 Arg Thr Gln Gly Cys Thr Glu Tyr Cys Tyr Asp Ser Tyr Ala Thr Gly
 100 105 110
 Cys Gly Gln Arg Cys Gly Ser Phe Gly Arg Leu Ile Cys Gly Thr Tyr
 115 120 125
 Lys Ala Cys Cys Leu Asp Arg Glu Asp Asn Gln Val Ala Gly Leu Val
 130 135 140
 His Glu Cys Glu Gln Thr His Gly Pro Ile Ala Val Ala Leu Ala Ala
 145 150 155 160
 Lys Thr Met Gly Leu Asn Leu Met Glu Leu Val Glu Lys Asn Thr Ile
 165 170 175
 Leu Ser Glu Glu Gln Lys Asn Glu Phe Arg Gln His Cys Ser Glu Ala
 180 185 190
 Lys Thr Gln Leu Tyr Gly Thr Met Gln Ser Leu Ser Gln Asn Phe Phe
 195 200 205
 Leu Glu Gly Val Asn Ser Ile Arg Glu Arg Gly Leu Asp Asp Ser Leu
 210 215 220
 Val Gln Ala Val Leu Ser Phe Ile Ala Thr Arg Ser Trp Glu Lys Thr
 225 230 235 240
 Ile Glu Ser Glu Glu Ala Ser Gly Thr Ser Ser Ala Ser Asn Ser Thr
 245 250 255
 Arg Ile Pro Ala Cys Tyr Ile Leu Asn Thr Ser Pro Leu Thr Thr Ser
 260 265 270
 Arg Leu Ser Cys Gly Ser Arg Asp Ala Arg Arg Pro Ser Ser Val Gly
 275 280 285
 Ala Glu Pro Gln Tyr Val Ala Lys Lys Tyr Asn Asp Asn Gly Met Ala
 290 295 300
 Arg Gln Leu Gly Lys Ile Gln Val Thr Asn Leu Lys Thr Gly Asp Phe
 305 310 315 320
 Ser Ala Leu Gly Pro Phe Gly Leu Leu Ile Val Lys Met Leu Asn Ser
 325 330 335
 Phe Leu Leu Ser Ala Ser Gln Ser Thr Ser Ser Ile Leu Lys His Thr
 340 345 350
 Gly Gly Glu Ile Cys Tyr Thr Cys Pro Asn Phe Arg Asp Ile Val Val
 355 360 365
 Leu Leu Met Leu Ala Ile Gly Tyr Cys Pro Ala Asn Thr Asp Glu Thr
 370 375 380
 Ser Val Val Asp Ile His Met Ile Asp Asp Pro Ile Met Thr Ile Phe
 385 390 395 400
 Tyr Arg Leu Gln Tyr Ser Tyr Arg Thr Gly Lys Thr Ser Ala Ser Phe
 405 410 415
 Leu Lys Lys Lys Pro Ser Leu Val Arg Gln Glu Ser Leu Asp Cys Pro
 420 425 430
 Thr Pro Ala Glu Ser Val Pro Leu Met Ser Ser Leu Glu Glu Glu Asp
 435 440 445
 Glu Asn Glu Asp Asp Asp Glu Asp Gly Asn Leu Ala Tyr Gln Gln Arg
 450 455 460
 Ile Leu Glu Cys Ser Gly His Leu Gln Thr Leu Phe Leu Gly Ile Lys
 465 470 475 480
 Ile Asn Lys Glu

<210>9

<211>304

<212>PRT

<213>Chlamydia pneumoniae

<400>9

Lys Lys Asp Tyr Ile Leu His Ala Asn Trp Cys Cys Trp Lys Gln Met
 1 5 10 15
 Leu Lys Ile Gln Lys Lys Arg Met Cys Val Ser Val Val Ile Thr Val
 20 25 30
 Gly Ala Ile Val Gly Phe Phe Asn Ser Ala Asp Ala Ala Pro Lys Lys
 35 40 45
 Lys Lys Ile Pro Ile Gln Ile Leu Tyr Ser Phe Thr Lys Val Ser Ser
 50 55 60
 Tyr Leu Lys Asn Glu Asp Ala Ser Thr Ile Phe Cys Val Asp Val Asp
 65 70 75 80
 Arg Gly Leu Leu Gln His Arg Tyr Leu Gly Ser Pro Gly Trp Gln Glu
 85 90 95
 Thr Arg Arg Arg Gln Leu Phe Lys Ser Leu Glu Asn Gln Ser Tyr Gly
 100 105 110
 Asn Glu Arg Leu Gly Glu Glu Thr Leu Ala Ile Asp Ile Phe Arg Asn
 115 120 125
 Lys Glu Cys Leu Glu Ser Glu Ile Pro Glu Gln Met Glu Ala Ile Leu
 130 135 140
 Ala Asn Ser Ser Ala Leu Val Leu Gly Ile Ser Ser Phe Gly Ile Thr
 145 150 155 160
 Gly Ile Pro Ala Thr Leu His Ser Leu Leu Arg Gln Asn Leu Ser Phe
 165 170 175
 Gln Lys Arg Ser Ile Ala Ser Glu Ser Phe Leu Leu Lys Ile Asp Ser
 180 185 190
 Ala Pro Ser Asp Ala Ser Val Phe Tyr Lys Gly Val Leu Phe Arg Gly
 195 200 205
 Glu Thr Ala Ile Val Asp Ala Leu Ser Gln Leu Phe Ala Gln Leu Asp
 210 215 220
 Leu Ser Pro Lys Lys Ile Ile Phe Leu Gly Glu Asp Pro Glu Val Val
 225 230 235 240
 Gln Ala Val Gly Ser Ala Cys Ile Gly Trp Gly Met Asn Phe Leu Gly
 245 250 255
 Leu Val Tyr Tyr Pro Ala Gln Glu Ser Leu Phe Ser Tyr Val His Pro
 260 265 270
 Tyr Ser Thr Ala Thr Glu Leu Gln Glu Ala Gln Gly Leu Gln Val Ile
 275 280 285
 Ser Asp Glu Val Ala Gln Leu Thr Leu Asn Ala Leu Pro Lys Met Asn
 290 295 300

<210>10

<211>277

<212>PRT

<213>Chlamydia pneumoniae

<400>10

Arg Ile Phe Met Arg Arg Tyr Leu Phe Met Val Leu Ala Leu Cys Leu
 1 5 10 15
 Tyr Arg Ala Ala Pro Leu Glu Ala Val Val Ile Lys Ile Thr Asp Ala
 20 25 30
 Gln Ala Val Leu Lys Phe Ala Arg Glu Lys Thr Leu Val Cys Phe Asn
 35 40 45
 Ile Glu Asp Thr Val Val Phe Pro Lys Gln Met Val Gly Gln Ser Ala
 50 55 60
 Trp Leu Tyr Asn Arg Glu Leu Asp Leu Lys Thr Thr Leu Ser Glu Glu
 65 70 75 80
 Gln Ala Arg Glu Gln Ala Phe Leu Glu Trp Met Gly Ile Ser Phe Leu
 85 90 95
 Val Asp Tyr Glu Leu Val Ser Ala Asn Leu Arg Asn Val Leu Thr Gly
 100 105 110
 Leu Ser Leu Lys Arg Ser Trp Val Leu Gly Ile Ser Gln Arg Pro Val
 115 120 125
 His Leu Ile Lys Asn Thr Leu Arg Ile Leu Arg Ser Phe Asn Ile Asp
 130 135 140

Phe Thr Ser Cys Pro A le Cys Glu Asp Gly Trp Leu Ser His Pro
 145 150 155 160
 Thr Lys Asp Thr Thr Phe Asp Gln Ala Met Ala Ile Glu Lys Asn Ile
 165 170 175
 Leu Phe Val Gly Ser Leu Lys Asn Gly Gln Pro Met Asp Ala Ala Leu
 180 185 190
 Glu Val Leu Leu Ser Gly Ile Ser Ser Pro Pro Ser Gln Ile Ile Tyr
 195 200 205
 Val Asp Gln Asp Ala Glu Arg Leu Arg Ser Ile Gly Ala Phe Cys Lys
 210 215 220
 Lys Ala Asn Ile Tyr Phe Ile Gly Met Leu Tyr Thr Pro Ala Lys Gln
 225 230 235 240
 Arg Val Glu Ser Tyr Asn Pro Lys Leu Thr Ala Ile Gln Trp Ser Gln
 245 250 255
 Ile Arg Lys Asn Leu Ser Asp Glu Tyr Tyr Glu Ser Leu Leu Ser Tyr
 260 265 270
 Val Lys Ser Lys Gly
 275

<210>11

<211>109

<212>PRT

<213>Chlamydia pneumoniae

<400>11

Lys Arg Leu Lys Asp Glu Ile Lys Tyr Thr Ser Leu Arg Arg Lys Ala
 1 5 10 15
 Met Leu Gly Lys Ile Ile Arg Gly Leu Ser Ser Leu Ile Val Ile Leu
 20 25 30
 Cys Ala Leu Asn Val Gly Leu Ile Gly Ile Thr His Asn Lys Leu Asn
 35 40 45
 Ile Ile Ala Lys Leu Cys Gly Gly Val Ser Thr Pro Ala Thr Gln Ile
 50 55 60
 Thr Tyr Ile Ile Ile Gly Ile Ala Gly Val Ile Cys Leu Leu Ser Phe
 65 70 75 80
 Cys Pro Phe Cys Ser Lys Lys Ser Arg His Ser His Gly Asp Ser Cys
 85 90 95
 Ser Ser Gly Gly Cys His Ser His His Ser Asp Lys Asn
 100 105

<210>12

<211>102

<212>PRT

<213>Chlamydia pneumoniae

<400>12

His Met Glu Gln Phe His Leu Asp Arg Glu Glu Ile Leu Leu Leu Ala
 1 5 10 15
 Lys Ala Ser Ala Leu Gln Leu Ser Glu Glu Leu Ile Gln Glu Tyr Gln
 20 25 30
 Thr Ser Leu Ser Ala Val Ile Thr Ser Met Lys Glu Ala Leu Ala Ile
 35 40 45
 Glu Ile Asp Asp Ala Asp Ser Cys Glu Ser Leu Phe Met His Val Val
 50 55 60
 Asn Val Glu Asp Leu Arg Glu Asp Ser Val Thr Ser Asp Phe Asn Arg
 65 70 75 80
 Glu Glu Phe Leu Arg Asn Val Pro Glu Ser Leu Gly Gly Leu Val Lys
 85 90 95
 Val Pro Ala Val Ile Lys
 100

<210>13

<211>494

<212>PRT

<213>Chlamydia pneumoniae

<400>13

Lys Ile Met Tyr Arg Tyr Ser Ala Leu Glu Leu Ala Lys Ala Val Thr
 1 5 10 15
 Leu Gly Glu Leu Thr Ala Thr Gly Val Thr Gln His Phe Phe His Arg

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<210>14
<211>500
<212>PRT
<213>Chlamydia pneumoniae
<400>14
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Glu Ile Cys Gln Lys Cys Ser Arg Arg Ser Ile Met Ser Ala Val
 1 5 10 15
 Tyr Ala Asp Trp Glu Ser Val Ile Gly Leu Glu Val His Val Glu Leu
 20 25 30
 Asn Thr Ala Ser Lys Leu Phe Ser Ser Ala Leu Asn Arg Phe Gly Asp
 35 40 45
 Glu Pro Asn Thr Asn Ile Ser Thr Val Cys Thr Gly Leu Pro Gly Ser
 50 55 60
 Leu Pro Val Leu Asn Gln Ser Ala Val Glu Lys Ala Val Leu Phe Gly
 65 70 75 80
 Cys Ala Val Glu Gly Glu Ile Ser Leu Leu Ser Arg Phe Asp Arg Lys
 85 90 95
 Ser Tyr Phe Tyr Pro Asp Ser Pro Arg Asn Phe Gln Ile Thr Gln Phe
 100 105 110
 Glu His Pro Ile Ile Arg Gly Gly Arg Ile Lys Ala Ile Val Gln Gly
 115 120 125
 Glu Glu Arg Tyr Phe Glu Leu Ala Gln Thr His Ile Glu Asp Asp Ala
 130 135 140
 Gly Met Leu Lys His Phe Gly Glu Phe Ala Gly Val Asp Tyr Asn Arg
 145 150 155 160
 Ala Gly Val Pro Leu Ile Glu Ile Val Ser Lys Pro Cys Met Phe Cys
 165 170 175
 Pro Glu Asp Gly Cys Cys Tyr Ala Thr Ser Leu Val Ser Leu Leu Asp
 180 185 190
 Tyr Ile Gly Ile Ser Asp Cys Asn Met Glu Glu Gly Ser Ile Arg Phe
 195 200 205
 Asp Val Asn Val Ser Val Arg Pro Lys Gly Ser Pro Glu Leu Arg Asn
 210 215 220
 Lys Val Glu Ile Lys Asn Met Asn Ser Phe Ala Phe Met Ala Gln Ala
 225 230 235 240
 Leu Glu Ala Glu Lys Gln Arg Gln Ile Asp Glu Tyr Leu Asn Gln Pro
 245 250 255
 Asn Lys Asp Pro Lys Leu Val Ile Pro Ala Ala Thr Tyr Arg Trp Asp
 260 265 270
 Pro Glu Lys Lys Lys Thr Val Leu Met Arg Leu Lys Glu Ser Ala Glu
 275 280 285
 Asp Tyr Lys Tyr Phe Pro Glu Pro Asp Leu Pro Thr Leu Gln Leu Thr
 290 295 300
 Glu Ser Tyr Ile Glu Arg Ile Arg Lys Thr Leu Pro Glu Leu Pro Tyr
 305 310 315 320
 Asp Lys Tyr His Arg Tyr Ile Gln Glu Tyr Gly Leu Ser Glu Asp Ile
 325 330 335
 Ala Ser Ile Leu Ile Ser Asp Lys Asn Ile Ala Thr Phe Phe Glu Val
 340 345 350
 Ala Cys Lys Asp Cys Lys Asn Phe Arg Ser Leu Ser Asn Trp Val Thr
 355 360 365
 Val Glu Phe Gly Gly Arg Cys Lys Thr Leu Gly Val Lys Leu Pro Ser
 370 375 380
 Ser Gly Ile Phe Pro Glu Gly Val Ala Gln Leu Val Asn Ala Ile Asp
 385 390 395 400
 Gln Gly Val Ile Thr Gly Lys Ile Ala Lys Glu Ile Ala Asp Leu Met
 405 410 415
 Met Glu Ser Pro Gly Lys Asn Pro Glu Glu Ile Leu Lys Glu Lys Pro
 420 425 430
 Glu Leu Leu Pro Met Ser Asp Glu Gly Glu Leu Gln Lys Ile Ile Ala
 435 440 445
 Glu Val Val Leu Ala Asn Pro Glu Ser Ile Val Asp Tyr Lys Asn Gly
 450 455 460
 Lys Thr Lys Ala Leu Gly Phe Leu Val Gly Gln Ile Met Lys Arg Thr
 465 470 475 480
 Ala Gly Lys Ala Pro Pro Lys Arg Val Asn Glu Leu Leu Leu Leu Glu
 485 490 495
 Leu Asp Lys Gly
 500

<210>15

<211>922

<212>PRT

<213>Chlamydia pneumoniae

<400>15

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Met Arg Phe Ser Leu Cys Gly Phe Pro Leu Val Phe Ser Phe Thr Leu
 1          5          10          15
Leu Ser Val Phe Asp Thr Ser Leu Ser Ala Thr Thr Ile Ser Leu Thr
          20          25          30
Pro Glu Asp Ser Phe His Gly Asp Ser Gln Asn Ala Glu Arg Ser Tyr
          35          40          45
Asn Val Gln Ala Gly Asp Val Tyr Ser Leu Thr Gly Asp Val Ser Ile
          50          55          60
Ser Asn Val Asp Asn Ser Ala Leu Asn Lys Ala Cys Phe Xaa Val Thr
          65          70          75          80
Ser Gly Ser Val Thr Phe Ala Gly Asn His His Gly Xaa Tyr Phe Asn
          85          90          95
Asn Ile Ser Ser Gly Thr Thr Lys Glu Gly Ala Val Leu Cys Cys Gln
          100          105          110
Asp Pro Gln Ala Thr Ala Arg Phe Ser Gly Phe Ser Thr Leu Ser Phe
          115          120          125
Asn Gln Ser Pro Gly Asp Ile Lys Glu Gln Gly Cys Leu Tyr Ser Lys
          130          135          140
Asn Ala Leu Met Leu Leu Asn Asn Tyr Val Val Arg Phe Glu Gln Asn
          145          150          155          160
Gln Ser Lys Thr Lys Gly Gly Ala Ile Ser Gly Ala Asn Val Thr Ile
          165          170          175
Val Gly Asn Tyr Asp Ser Val Ser Phe Tyr Gln Asn Ala Ala Thr Phe
          180          185          190
Gly Gly Ala Ile His Ser Ser Gly Pro Leu Gln Ile Ala Val Asn Gln
          195          200          205
Ala Glu Ile Arg Phe Ala Gln Asn Thr Ala Lys Asn Gly Ser Gly Gly
          210          215          220
Ala Leu Tyr Ser Asp Gly Asp Ile Asp Ile Asp Gln Asn Ala Tyr Val
          225          230          235          240
Leu Phe Arg Glu Asn Glu Ala Leu Thr Thr Ala Ile Gly Lys Gly Gly
          245          250          255
Ala Val Cys Cys Leu Pro Thr Ser Gly Ser Ser Thr Pro Val Pro Ile
          260          265          270
Val Thr Phe Ser Asp Asn Lys Gln Leu Val Phe Glu Arg Asn His Ser
          275          280          285
Ile Met Gly Gly Gly Ala Ile Tyr Ala Arg Lys Leu Ser Ile Ser Ser
          290          295          300
Gly Gly Pro Thr Leu Phe Ile Asn Asn Ile Ser Tyr Ala Asn Ser Gln
          305          310          315          320
Asn Leu Gly Gly Ala Ile Ala Ile Asp Thr Gly Gly Glu Ile Ser Leu
          325          330          335
Ser Ala Glu Lys Gly Thr Ile Thr Phe Gln Gly Asn Arg Thr Ser Leu
          340          345          350
Pro Phe Leu Asn Gly Ile His Leu Leu Gln Asn Ala Lys Phe Leu Lys
          355          360          365
Leu Gln Ala Arg Asn Gly Tyr Ser Ile Glu Phe Tyr Asp Pro Ile Thr
          370          375          380
Ser Glu Ala Asp Gly Ser Thr Gln Leu Asn Ile Asn Gly Asp Pro Lys
          385          390          395          400
Asn Lys Glu Tyr Thr Gly Thr Ile Leu Phe Ser Gly Glu Lys Ser Leu
          405          410          415
Ala Asn Asp Pro Arg Asp Phe Lys Ser Thr Ile Pro Gln Asn Val Asn
          420          425          430
Leu Ser Ala Gly Tyr Leu Val Ile Lys Glu Gly Ala Glu Val Thr Val
          435          440          445
Ser Lys Phe Thr Gln Ser Pro Gly Ser His Leu Val Leu Asp Leu Gly
          450          455          460
Thr Lys Leu Ile Ala Ser Lys Glu Asp Ile Ala Ile Thr Gly Leu Ala

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465 470 475 480
 Ile Asp Ile Asp Ser Leu Ser Ser Ser Ser Thr Ala Ala Val Ile Lys
 485 490 495
 Ala Asn Thr Ala Asn Lys Gln Ile Ser Val Thr Asp Ser Ile Glu Leu
 500 505 510
 Ile Ser Pro Thr Gly Asn Ala Tyr Glu Asp Leu Arg Met Arg Asn Ser
 515 520 525
 Gln Thr Phe Pro Leu Leu Ser Leu Glu Pro Gly Ala Gly Gly Ser Val
 530 535 540
 Thr Val Thr Ala Gly Asp Phe Leu Pro Val Ser Pro His Tyr Gly Phe
 545 550 555 560
 Gln Gly Asn Trp Lys Leu Ala Trp Thr Gly Thr Gly Asn Lys Val Gly
 565 570 575
 Glu Phe Phe Trp Asp Lys Ile Asn Tyr Lys Pro Arg Pro Glu Lys Glu
 580 585 590
 Gly Asn Leu Val Pro Asn Ile Leu Trp Gly Asn Ala Val Asp Val Arg
 595 600 605
 Ser Leu Met Gln Val Gln Glu Thr His Ala Ser Ser Leu Gln Thr Asp
 610 615 620
 Arg Gly Leu Trp Ile Asp Gly Ile Gly Asn Leu Phe His Val Ser Ala
 625 630 635 640
 Ser Glu Asp Asn Ile Arg Tyr Arg His Asn Ser Gly Gly Tyr Val Leu
 645 650 655
 Ser Val Asn Asn Glu Ile Thr Pro Lys His Tyr Thr Ser Met Ala Phe
 660 665 670
 Ser Gln Leu Phe Ser Arg Asp Lys Asp Tyr Ala Val Ser Asn Asn Glu
 675 680 685
 Tyr Arg Met Tyr Leu Gly Ser Tyr Leu Tyr Gln Tyr Thr Thr Ser Leu
 690 695 700
 Gly Asn Ile Phe Arg Tyr Ala Ser Arg Asn Pro Asn Val Asn Val Gly
 705 710 715 720
 Ile Leu Ser Arg Arg Phe Leu Gln Asn Pro Leu Met Ile Phe His Phe
 725 730 735
 Leu Cys Ala Tyr Gly His Ala Thr Asn Asp Met Lys Thr Asp Tyr Ala
 740 745 750
 Asn Phe Pro Met Val Lys Asn Ser Trp Arg Asn Asn Cys Trp Ala Ile
 755 760 765
 Glu Cys Gly Gly Ser Met Pro Leu Leu Val Phe Glu Asn Gly Arg Leu
 770 775 780
 Phe Gln Gly Ala Ile Pro Phe Met Lys Leu Gln Leu Val Tyr Ala Tyr
 785 790 795 800
 Gln Gly Asp Phe Lys Glu Thr Thr Ala Asp Gly Arg Arg Phe Ser Asn
 805 810 815
 Gly Ser Leu Thr Ser Ile Ser Val Pro Leu Gly Ile Arg Phe Glu Lys
 820 825 830
 Leu Ala Leu Ser Gln Asp Val Leu Tyr Asp Phe Ser Phe Ser Tyr Ile
 835 840 845
 Pro Asp Ile Phe Arg Lys Asp Pro Ser Cys Glu Ala Ala Leu Val Ile
 850 855 860
 Ser Gly Asp Ser Trp Leu Val Pro Ala Ala His Val Ser Arg His Ala
 865 870 875 880
 Phe Val Gly Ser Gly Thr Gly Arg Tyr His Phe Asn Asp Tyr Thr Glu
 885 890 895
 Leu Leu Cys Arg Gly Ser Ile Glu Cys Arg Pro His Ala Arg Asn Tyr
 900 905 910
 Asn Ile Asn Cys Gly Ser Lys Phe Arg Phe
 915 920

<210>16

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>16

Ala Leu Pro Val Gly Glu Ile Ser Ser Ile Glu Ser Val Thr Asp Ile
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Cys Leu Phe Ala Val Phe Ala Leu Ile Thr Ala Ala Val Glu Asp Glu
 20 25 30
 Leu Lys Leu Ser Ile Ser Ile Ala Arg Pro Val Met Ala Met Ser Ser
 35 40 45
 Leu Glu Ala Ile Ser Leu Val Pro Lys Ser Lys Thr Lys Cys Asp Pro
 50 55 60
 Gly Asp Cys Val Asn Phe Glu Thr Val Thr Ser Ala Pro Ser Leu Ile
 65 70 75 80
 Thr Lys Tyr Pro Ala Asp Arg Leu Thr Phe
 85 90

<210>17

<211>1003

<212>PRT

<213>Chlamydia pneumoniae

<400>17

Lys Ser Phe Arg Tyr Asn Leu Ser Leu Ile Phe Ser Phe Leu Val Val
 1 5 10 15
 Ile Pro Leu Thr Asp Ser Thr Thr Ser Ser Leu Ser Thr Ser Leu Leu
 20 25 30
 Asp Glu Gly Asn Pro Gln Ser Met Arg Lys Leu Arg Ile Leu Ala Ile
 35 40 45
 Val Leu Ile Ala Leu Ser Ile Ile Leu Ile Ala Gly Gly Val Val Leu
 50 55 60
 Leu Thr Val Ala Ile Pro Gly Leu Ser Ser Val Ile Ser Ser Pro Ala
 65 70 75 80
 Gly Met Gly Ala Cys Ala Leu Gly Cys Val Met Leu Ala Leu Gly Ile
 85 90 95
 Asp Val Leu Leu Lys Lys Arg Glu Val Pro Ile Val Leu Ala Ser Val
 100 105 110
 Thr Thr Thr Pro Gly Thr Gly Ser Pro Arg Ser Gly Ile Ser Ile Ser
 115 120 125
 Gly Ala Asp Ser Thr Ile Arg Ser Leu Pro Thr Tyr Leu Leu Asp Glu
 130 135 140
 Gly His Pro Gln Ser Met Arg Lys Leu Arg Ile Leu Ala Ile Val Leu
 145 150 155 160
 Ile Val Phe Ser Ile Ile Leu Ile Ala Ser Gly Val Val Leu Leu Thr
 165 170 175
 Val Ala Ile Pro Gly Leu Ser Ser Val Ile Ser Ser Pro Ala Gly Met
 180 185 190
 Gly Ala Cys Ala Leu Gly Cys Val Met Leu Ala Leu Gly Ile Asp Val
 195 200 205
 Leu Leu Lys Lys Arg Glu Val Pro Ile Val Leu Ala Ser Val Thr Thr
 210 215 220
 Thr Pro Gly Thr Gly Ser Pro Arg Ser Gly Ile Ser Ile Ser Gly Ala
 225 230 235 240
 Asp Ser Thr Ile Arg Ser Leu Pro Thr Tyr Pro Leu Asp Glu Gly His
 245 250 255
 Pro Gln Ser Met Arg Lys Leu Arg Ile Leu Ala Ile Val Leu Ile Val
 260 265 270
 Phe Ser Ile Ile Leu Ile Ala Ser Gly Val Val Leu Leu Thr Val Ala
 275 280 285
 Ile Pro Gly Leu Ser Ser Ile Ile Ser Ser Pro Ala Glu Met Gly Ala
 290 295 300
 Cys Ala Leu Gly Cys Val Met Leu Ala Leu Gly Ile Asp Val Leu Leu
 305 310 315 320
 Lys Lys Arg Glu Val Pro Ile Val Val Pro Ala Pro Ile Pro Glu Glu
 325 330 335
 Val Val Ile Asp Asp Ile Asp Glu Glu Ser Ile Arg Leu Gln Gln Glu
 340 345 350
 Ala Glu Ala Ala Leu Ala Arg Leu Pro Glu Glu Met Ser Ala Phe Glu
 355 360 365
 Gly Tyr Ile Lys Val Val Glu Ser His Leu Glu Asn Met Lys Ser Leu
 370 375 380
 Pro Tyr Asp Gly His Gly Leu Glu Glu Lys Thr Lys His Gln Ile Arg

385	Val	Val	Arg	Ser	Ser	Leu	Lys	Ala	Met	Val	Pro	Glu	Phe	Leu	Asp	Ile
					405					410					415	
	Arg	Arg	Ile	Phe	Glu	Glu	Glu	Glu	Phe	Phe	Phe	Leu	Ser	Ala	Arg	Lys
				420					425					430		
	Arg	Leu	Ile	Asp	Leu	Ala	Thr	Thr	Leu	Val	Glu	Arg	Lys	Ile	Leu	Thr
			435					440					445			
	Glu	Gln	Leu	Glu	Arg	Asn	Asn	Leu	Arg	Lys	Ala	Phe	Ser	Tyr	Leu	Tyr
		450				455						460				
	Gln	Asp	Ser	Ile	Phe	Lys	Lys	Ile	Ile	Asp	Asn	Phe	Glu	Lys	Leu	Ala
465					470					475					480	
	Trp	Lys	Phe	Met	Ile	Leu	Ser	Lys	Ser	Ile	Cys	Arg	Phe	Thr	Ile	Ile
				485						490					495	
	Phe	Glu	Asn	His	Glu	His	Gly	Val	Ala	Lys	Ser	Leu	Leu	His	Lys	Asn
			500					505						510		
	Ala	Val	Leu	Leu	Glu	Lys	Val	Ile	Tyr	Arg	Ser	Leu	Gln	Lys	Ser	Tyr
			515					520					525			
	Arg	Asp	Ile	Gly	Met	Ser	Ser	Ala	Lys	Met	Lys	Ile	Leu	His	Gly	Asn
		530				535						540				
	Pro	Phe	Phe	Ser	Leu	Glu	Asp	Asn	Lys	Lys	Thr	Ile	Met	Lys	Glu	His
545					550						555				560	
	Ala	Glu	Met	Leu	Glu	Ser	Leu	Ser	Ser	Tyr	Arg	Lys	Val	Phe	Leu	Ala
				565						570					575	
	Leu	Ser	Asp	Glu	Asn	Val	Val	Asp	Thr	Pro	Ser	Asp	Pro	Lys	Lys	Trp
			580					585						590		
	Asp	Leu	Ser	Gly	Ile	Pro	Cys	Arg	Asp	Ala	Leu	Ser	Glu	Ile	Ser	Arg
			595				600						605			
	Asp	Glu	Gln	Trp	Gln	Lys	Lys	Ala	His	Leu	Lys	His	Gln	Glu	Ser	Leu
		610				615						620				
	Tyr	Thr	Gln	Ala	Arg	Asp	Arg	Leu	Thr	Asp	Gln	Ser	Ser	Lys	Glu	Asn
625					630						635				640	
	Gln	Lys	Glu	Leu	Glu	Lys	Ala	Glu	Gln	Glu	Tyr	Ile	Ser	Ser	Trp	Glu
				645						650					655	
	Arg	Val	Lys	Lys	Phe	Glu	Ile	Glu	Arg	Val	Gln	Glu	Arg	Ile	Gln	Ala
				660				665						670		
	Ile	Gln	Lys	Leu	Tyr	Pro	Asn	Ile	Leu	Glu	Arg	Glu	Glu	Glu	Thr	Thr
			675				680						685			
	Gly	Gln	Glu	Thr	Val	Thr	Pro	Thr	Val	Gln	Gly	Thr	Thr	Ala	Ser	Ser
		690				695						700				
	Asp	Leu	Thr	Asp	Ile	Leu	Gly	Arg	Ile	Glu	Val	Ser	Ser	Arg	Glu	Asp
705					710					715					720	
	Asn	Gln	Asn	Gln	Glu	Ser	Cys	Val	Lys	Val	Leu	Arg	Ser	His	Glu	Val
				725						730					735	
	Glu	Met	Ser	Trp	Glu	Val	Lys	Gln	Glu	Tyr	Gly	Pro	Lys	Lys	Lys	Glu
			740					745						750		
	Phe	Gln	Asp	Gln	Met	Gly	Ser	Leu	Glu	Arg	Phe	Phe	Thr	Glu	His	Ile
			755				760						765			
	Glu	Glu	Leu	Glu	Val	Leu	Gln	Lys	Asp	Tyr	Ser	Lys	His	Leu	Ser	Tyr
		770				775						780				
	Phe	Lys	Lys	Val	Asn	Asn	Lys	Lys	Glu	Val	Gln	Tyr	Ala	Lys	Phe	Arg
785					790						795				800	
	Leu	Lys	Val	Leu	Glu	Ser	Asp	Leu	Glu	Gly	Ile	Leu	Ala	Gln	Thr	Glu
				805						810					815	
	Ser	Ala	Glu	Ser	Leu	Leu	Thr	Gln	Glu	Glu	Leu	Pro	Ile	Leu	Ala	Thr
			820					825						830		
	Arg	Gly	Ala	Leu	Glu	Lys	Ala	Val	Phe	Lys	Gly	Ser	Leu	Cys	Cys	Ala
			835				840						845			
	Leu	Ala	Ser	Lys	Ala	Lys	Pro	Tyr	Phe	Glu	Glu	Asp	Pro	Arg	Phe	Gln
		850				855						860				
	Asp	Ser	Asp	Thr	Gln	Leu	Arg	Ala	Leu	Thr	Leu	Arg	Leu	Gln	Glu	Ala
865					870						875				880	
	Lys	Ala	Ser	Leu	Glu	Glu	Ile	Lys	Arg	Phe	Ser	Asn	Leu	Glu	Asn	
				885						890				895		
	Asp	Ile	Ala	Glu	Arg	Arg	Leu	Leu	Lys	Glu	Ser	Lys	Gln	Thr	Phe	

900 905 10
 Glu Arg Ala Gly Leu Gly Val Leu Arg Glu Ile Ala Val Glu Ser Thr
 915 920 925
 Tyr Asp Leu Arg Ser Leu Thr Asn Thr Trp Glu Gly Thr Pro Glu Ser
 930 935 940
 Glu Lys Val Tyr Phe Ser Met Tyr Leu Asn Tyr Tyr Asn Glu Glu Lys
 945 950 955 960
 Arg Arg Xaa Lys Thr Arg Leu Val Glu Met Thr Gln Arg Tyr Arg Asp
 965 970 975
 Phe Lys Met Ala Leu Glu Ala Met Gln Phe Asn Glu Glu Ala Leu Leu
 980 985 990
 Gln Glu Glu Leu Ser Ile Gln Ala Pro Ser Glu
 995 1000

<210>18

<211>302

<212>PRT

<213>Chlamydia pneumoniae

<400>18

Cys Lys Tyr Ser Tyr Leu Leu Asn Tyr Pro Pro Pro Pro Arg Arg Ser
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 Leu Gly Val Ser Cys Ser Lys Leu Arg Ser Leu Ser Ile Thr Leu Leu
 20 25 30
 Val Leu Gly Val Leu Leu Leu Thr Leu Gly Ile Pro Gly Leu Thr Ala
 35 40 45
 Gly Ile Ser Phe Gly Ala Gly Leu Gly Phe Ser Ala Leu Gly Gly Val
 50 55 60
 Leu Val Ile Ser Gly Leu Leu Phe Leu Leu Val Arg Arg Glu Val Pro
 65 70 75 80
 Thr Val Arg Ser Glu Ile Pro Arg Gly Val Ser Val Thr Pro Ser
 85 90 95
 Glu Glu Pro Ala Leu Glu Lys Ala Gln Lys Glu Pro Glu Thr Lys Lys
 100 105 110
 Ile Leu Asp Arg Leu Pro Lys Glu Leu Asp Gln Leu Asp Thr Tyr Ile
 115 120 125
 Gln Glu Val Phe Ala Cys Leu Glu Arg Leu Lys Asp Pro Lys Tyr Glu
 130 135 140
 Asp Arg Gly Leu Leu Thr Glu Ala Lys Glu Lys Leu Arg Val Phe Asp
 145 150 155 160
 Val Val Glu Lys Asp Met Met Ser Glu Phe Leu Asp Ile Gln Arg Val
 165 170 175
 Leu Asn Glu Glu Ala Tyr Tyr Val Glu His Cys Gln Asp Pro Leu Glu
 180 185 190
 Asn Ile Ala Tyr Glu Ile Phe Ser Ser Gln Glu Leu Arg Asp Tyr Tyr
 195 200 205
 Cys Ala Gly Val Cys Gly Tyr Leu Pro Ser Gly Asp Ala Arg Ala Asp
 210 215 220
 Arg Leu Lys Arg Ser Val Lys Glu Val Met Asp Arg Phe Met Arg Val
 225 230 235 240
 Thr Trp Lys Ser Trp Glu Ala Ser Val Met Leu Asp His Ser Tyr Gly
 245 250 255
 Val Ala Arg Glu Leu Phe Lys Lys Ala Val Gly Val Leu Glu Glu Ser
 260 265 270
 Val Tyr Lys Ile Leu Phe Lys Ser Tyr Arg Asp Ala Phe Tyr Glu Cys
 275 280 285
 Glu Lys Ala Lys Ile Gln Arg Asp Gly Arg Phe Lys Trp Leu
 290 295 300

<210>19

<211>477

<212>PRT

<213>Chlamydia pneumoniae

<400>19

Asp Thr Ser Ala His Ala Glu Gln Arg Phe Arg Asp Ile Asn Gly Cys
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 Trp Glu Asp Leu Lys Gln Thr Ile Phe Trp Val Gly Glu His Asp Cys

20				25				30							
Thr	Asp	Ile	Glu	Thr	Val	Arg	Lys	Ser	Cys	Met	Trp	Leu	Asp	Arg	Tyr
35				40				45							
Ala	Asp	Lys	Phe	Ile	Leu	Arg	Glu	Lys	Glu	Glu	Lys	Met	Glu	Arg	His
50				55				60							
Glu	Leu	Phe	His	Ala	Thr	Met	Val	Arg	Lys	Ala	Ser	Gly	His	Ala	Tyr
65				70				75							
Ala	Lys	Ala	Lys	Ala	Phe	Glu	Lys	Glu	Arg	Ser	Asn	Glu	Asn	Gln	
85				90				95							
Arg	Lys	Val	Lys	Asp	Val	Glu	Lys	Trp	Leu	Ser	Lys	Gly	Leu	Ala	Glu
100				105				110							
Phe	Arg	Asn	Gln	Glu	Ser	Arg	Arg	Ala	Arg	Glu	Arg	Leu	Arg	Glu	Leu
115				120				125							
Gln	Thr	Leu	Tyr	Pro	Glu	Val	Ser	Val	Glu	Glu	Arg	Val	Leu	Glu	Arg
130				135				140							
Gln	Arg	Thr	Lys	Lys	Val	Asn	Leu	Glu	Asn	Leu	Tyr	Ala	Asp	Ile	Glu
145				150				155							
Lys	Lys	Tyr	His	His	Cys	Val	Arg	Glu	Gln	Glu	His	Tyr	Trp	Lys	Glu
165				170				175							
Val	Glu	Asn	Lys	Glu	Ala	Glu	Tyr	Arg	Glu	Asn	Gly	Glu	Lys	Val	Leu
180				185				190							
Ser	Ala	Glu	Glu	Val	Ser	Glu	Cys	Leu	Gln	Arg	Leu	Glu	Asp	Cys	Leu
195				200				205							
Glu	Thr	Trp	Ser	Lys	Lys	Leu	Thr	Lys	Ala	Glu	Glu	Ser	Val	Phe	Glu
210				215				220							
Met	Lys	Phe	Asp	Ala	Thr	Glu	Lys	Leu	Gly	Asn	Lys	Val	Leu	Ser	Asp
225				230				235							
Val	Thr	Asn	Arg	Leu	Glu	Ile	Leu	Cys	Glu	Asp	Ala	Glu	Glu	Met	Ile
245				250				255							
Phe	Arg	Ile	Glu	Glu	Ile	Glu	Met	Thr	Leu	Arg	Met	Val	Glu	Leu	Pro
260				265				270							
Leu	Leu	Phe	Met	Lys	Asn	Thr	Phe	Glu	Lys	Ala	Ser	Leu	Gln	Tyr	Asn
275				280				285							
Ser	Cys	Lys	Glu	Met	Leu	Ala	Lys	Val	Glu	Pro	Gln	Cys	Lys	Glu	Ser
290				295				300							
Pro	Thr	Tyr	Arg	Ser	Ser	Gln	Glu	Arg	Leu	Glu	Arg	Leu	Asn	Gln	Asp
305				310				315							
Leu	Gln	Thr	Ala	Tyr	Thr	Asn	Cys	Gln	Glu	Arg	Leu	Gln	Gly	Phe	Ser
325				330				335							
Asp	Leu	Glu	Ser	Lys	Val	Arg	Thr	Cys	Arg	Asp	His	Leu	Arg	Glu	Gln
340				345				350							
Met	Lys	His	Phe	Glu	Val	Gln	Gly	Leu	Asn	Phe	Ile	Asn	Glu	Glu	Leu
355				360				365							
Leu	Trp	Val	Gly	Ala	Glu	Leu	Phe	Thr	Gln	Ala	Arg	Leu	Asp	Leu	Val
370				375				380							
Ala	Thr	Val	Pro	Tyr	Met	Glu	Phe	Tyr	Leu	Gln	Tyr	His	Asn	Ile	Lys
385				390				395							
Arg	Glu	Lys	Val	Arg	Ser	Gln	Trp	Met	Ala	Lys	Thr	Glu	Arg	Tyr	Arg
405				410				415							
Glu	Ile	Arg	Gln	Ala	Phe	Gln	Gly	Val	Met	Lys	Glu	Asp	Leu	Leu	Ala
420				425				430							
Glu	Asp	Thr	Ile	Leu	Lys	Glu	Glu	Asp	Tyr	Trp	Leu	Leu	Arg	Asp	Asp
435				440				445							
Trp	Leu	Leu	Arg	Asp	Glu	Arg	Lys	Asn	Arg	Gln	Arg	Arg	Leu	Ile	Cys
450				455				460							
Asn	Lys	Ile	Ala	Ala	Ala	Gln	Gln	Arg	Val	Lys	Gly	Phe			
465				470				475							

<210>20

<211>810

<212>PRT

<213>Chlamydia pneumoniae

<400>20

Cys Lys Tyr Phe Tyr Leu Arg Ser Tyr Pro Pro Pro Gln His Ser Val

1

5

10

15

Gly	Ser	Ile	Ser		Pro	Ser	Lys	Leu	Arg	Val	Leu	Ala	Ile	Thr	Phe
			20					25					30		
Leu	Val	Phe	Gly	Met	Leu	Leu	Leu	Ile	Ser	Gly	Ala	Leu	Phe	Leu	Thr
		35					40					45			
Leu	Gly	Ile	Pro	Gly	Leu	Ser	Ala	Ala	Ile	Ser	Phe	Gly	Leu	Gly	Ile
	50					55					60				
Gly	Leu	Ser	Ala	Leu	Gly	Gly	Val	Leu	Met	Ile	Ser	Gly	Leu	Leu	Cys
65					70					75					80
Leu	Leu	Val	Lys	Arg	Glu	Ile	Pro	Thr	Val	Arg	Pro	Glu	Glu	Ile	Pro
				85					90					95	
Glu	Gly	Val	Ser	Leu	Ala	Pro	Ser	Glu	Glu	Pro	Ala	Leu	Gln	Ala	Ala
			100					105					110		
Gln	Lys	Thr	Leu	Ala	Gln	Leu	Pro	Lys	Glu	Leu	Asp	Gln	Leu	Asp	Thr
		115					120					125			
Asp	Ile	Gln	Glu	Val	Phe	Ala	Cys	Leu	Arg	Lys	Leu	Lys	Asp	Ser	Lys
	130					135					140				
Tyr	Glu	Ser	Arg	Ser	Phe	Leu	Asn	Asp	Ala	Lys	Lys	Glu	Leu	Arg	Val
145					150					155					160
Phe	Asp	Phe	Val	Val	Glu	Asp	Thr	Leu	Ser	Glu	Ile	Phe	Glu	Leu	Arg
				165					170					175	
Gln	Ile	Val	Ala	Gln	Glu	Gly	Trp	Asp	Leu	Asn	Phe	Leu	Ile	Asn	Gly
			180					185					190		
Gly	Arg	Ser	Leu	Met	Met	Thr	Ala	Glu	Ser	Glu	Ser	Leu	Asp	Leu	Phe
		195					200					205			
His	Val	Ser	Lys	Arg	Leu	Gly	Tyr	Leu	Pro	Ser	Gly	Asp	Val	Arg	Gly
	210					215					220				
Glu	Gly	Leu	Lys	Lys	Ser	Ala	Lys	Glu	Ile	Val	Ala	Arg	Leu	Met	Ser
225					230					235					240
Leu	His	Cys	Glu	Ile	His	Lys	Val	Ala	Val	Ala	Phe	Asp	Arg	Asn	Ser
				245					250					255	
Tyr	Ala	Met	Ala	Glu	Lys	Ala	Phe	Ala	Lys	Ala	Leu	Gly	Ala	Leu	Glu
			260					265					270		
Glu	Ser	Val	Tyr	Arg	Ser	Leu	Thr	Gln	Ser	Tyr	Arg	Asp	Lys	Phe	Leu
		275					280					285			
Glu	Ser	Glu	Arg	Ala	Lys	Ile	Pro	Trp	Asn	Gly	His	Ile	Thr	Trp	Leu
	290					295					300				
Arg	Asp	Asp	Ala	Lys	Ser	Gly	Cys	Ala	Glu	Lys	Lys	Leu	Arg	Asp	Ala
305					310					315					320
Glu	Glu	Arg	Trp	Lys	Lys	Phe	Arg	Lys	Ala	Val	Phe	Trp	Val	Glu	Glu
				325					330					335	
Asp	Gly	Gly	Phe	Asp	Ile	Asn	Asn	Leu	Leu	Gly	Asp	Trp	Gly	Thr	Val
			340					345					350		
Leu	Asp	Pro	Tyr	Arg	Gln	Glu	Arg	Met	Asp	Glu	Ile	Thr	Phe	His	Glu
		355					360					365			
Leu	Tyr	Glu	Lys	Thr	Thr	Phe	Leu	Lys	Arg	Leu	His	Arg	Lys	Cys	Ala
	370					375					380				
Leu	Ala	Lys	Thr	Thr	Phe	Glu	Lys	Lys	Arg	Ser	Lys	Lys	Asn	Leu	Gln
385						390					395				400
Ala	Val	Glu	Glu	Ala	Asn	Ala	Arg	Arg	Leu	Lys	Tyr	Val	Arg	Asp	Trp
				405					410					415	
Tyr	Asp	Gln	Glu	Phe	Gln	Lys	Ala	Gly	Glu	Arg	Leu	Glu	Lys	Leu	His
			420					425					430		
Ala	Leu	Tyr	Pro	Glu	Val	Ser	Val	Ser	Ile	Arg	Glu	Asn	Lys	Ile	Gln
		435					440					445			
Glu	Thr	Arg	Ser	Asn	Leu	Glu	Lys	Ala	Tyr	Glu	Ala	Ile	Glu	Glu	Asn
	450					455					460				
Tyr	Arg	Cys	Cys	Val	Arg	Glu	Gln	Glu	Asp	Tyr	Trp	Lys	Glu	Glu	Glu
465					470					475					480
Lys	Arg	Glu	Ala	Glu	Phe	Arg	Glu	Arg	Gly	Asn	Lys	Ile	Leu	Ser	Pro
				485					490					495	
Glu	Glu	Leu	Glu	Ser	Ser	Leu	Glu	Gln	Phe	Asp	His	Gly	Leu	Lys	Asn
			500					505					510		
Phe	Ser	Glu	Lys	Leu	Met	Glu	Leu	Glu	Gly	His	Ile	Leu	Lys	Leu	Gln
			515				520						525		

Lys Glu Ala Thr Ala Val Glu Asn Lys Ile Leu Ser A la Glu
 530 535 540
 Ser Arg Leu Glu Ile Val Phe Glu Asp Val Lys Glu Met Pro Cys Arg
 545 550 555 560
 Ile Glu Glu Ile Glu Lys Thr Leu Arg Met Ala Glu Leu Pro Leu Leu
 565 570 575
 Pro Thr Lys Lys Ala Phe Glu Lys Ala Cys Ser Gln Tyr Asn Ser Cys
 580 585 590
 Ala Glu Met Leu Glu Lys Val Lys Pro Tyr Cys Lys Glu Ser Leu Ala
 595 600 605
 Tyr Val Thr Ser Lys Glu Arg Leu Val Ser Leu Asp Glu Asp Leu Arg
 610 615 620
 Arg Ala Tyr Thr Glu Cys Gln Lys Arg Phe Gln Gly Asp Ser Gly Leu
 625 630 635 640
 Glu Ser Glu Val Arg Ala Cys Arg Glu Gln Leu Arg Glu Arg Ile Gln
 645 650 655
 Glu Phe Glu Thr Gln Gly Leu Asp Leu Val Glu Lys Glu Leu Leu Cys
 660 665 670
 Val Ser Ser Arg Leu Arg Asn Thr Glu Cys Asp Cys Val Ser Gly Val
 675 680 685
 Lys Lys Glu Ala Pro Pro Gly Lys Lys Phe Tyr Ala Gln Tyr Tyr Asp
 690 695 700
 Glu Ile Tyr Arg Val Arg Val Gln Ser Arg Trp Met Thr Met Ser Glu
 705 710 715 720
 Arg Leu Arg Glu Gly Val Gln Ala Cys Asn Lys Met Leu Lys Ala Gly
 725 730 735
 Leu Ser Glu Glu Asp Lys Val Leu Lys Glu Glu Glu Tyr Trp Leu Tyr
 740 745 750
 Arg Glu Glu Arg Lys Asn Lys Glu Lys Arg Leu Val Gly Thr Lys Ile
 755 760 765
 Val Ala Thr Gln Gln Arg Val Ala Ala Phe Glu Ser Ile Glu Val Pro
 770 775 780
 Glu Ile Pro Glu Ala Pro Glu Glu Lys Pro Ser Leu Leu Asp Lys Ala
 785 790 795 800
 Arg Ser Leu Phe Thr Arg Glu Asp His Ser
 805 810

<210>21

<211>83

<212>PRT

<213>Chlamydia pneumoniae

<400>21

Glu Trp Ser Ser Arg Val Asn Lys Glu Arg Ala Leu Ser Ser Lys Leu
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 Gly Phe Ser Ser Gly Ala Ser Gly Ile Ser Gly Thr Ser Met Asp Ser
 20 25 30
 Asn Ala Ala Thr Arg Cys Cys Val Ala Thr Ile Leu Val Pro Thr Lys
 35 40 45
 Arg Phe Ser Leu Phe Phe Leu Ser Ser Arg Tyr Asn Gln Tyr Ser Ser
 50 55 60
 Ser Leu Arg Thr Leu Ser Ser Ser Leu Arg Pro Ala Phe Asn Ile Leu
 65 70 75 80
 Leu His Ala

<210>22

<211>246

<212>PRT

<213>Chlamydia pneumoniae

<400>22

Phe Trp Tyr Ser Ile Met Thr Ala Ala Pro Ala Ile Leu His Val Ser
 1 5 10 15
 Pro Thr Pro Pro Glu Glu Thr Lys Phe Val Ile Pro Lys Asp Ser Lys
 20 25 30
 Ser Arg Ala Leu Gly Ile Thr Leu Leu Val Val Gly Ile Leu Leu Val
 35 40 45

Val Cys Gly Ala Val Leu Ser Gly Val Ile Ser G eu Ser Ala
 50 55 60
 Leu Ile Val Cys Gly Leu Gly Ile Ser Thr Ile Ser Leu Gly Val Val
 65 70 75 80
 Leu Phe Val Leu Gly Leu Ile Leu Leu Arg Lys Arg Glu Leu Thr
 85 90 95
 Leu Glu Gln Ile Glu Ala Lys Gln Ile Ala Glu Thr Phe Ala Asp Glu
 100 105 110
 Leu Lys Glu Leu Glu Met Tyr Ile Gln Ser Thr Glu Lys Ser Leu Glu
 115 120 125
 Lys Ile Glu Gly Ser Arg Tyr Ser Asp Gln Gly Phe Leu Asn Arg Ala
 130 135 140
 Thr Gln Lys Ile Leu Asp Leu Glu Ser Ser Leu Ser Ser Ile Thr Ser
 145 150 155 160
 Glu Phe Arg Asp Leu Arg Gln Leu Phe Asp Glu Glu Lys Ile Glu Leu
 165 170 175
 Leu Ser Gly Glu Arg Leu Leu Glu Phe Ile Ala Ala Asn Leu Phe Lys
 180 185 190
 Gln Gly Arg Asp Val Tyr Leu Asn Leu Gly Asn Leu Ala Asp Ile Arg
 195 200 205
 Ala Tyr Met Gly Pro Asn Asn Tyr Lys Val Ala Met Val Ile Glu Lys
 210 215 220
 Ala Lys Ala Val Val His Glu Phe Ile Val Leu Thr Thr Met Ala Arg
 225 230 235 240
 Glu Leu Glu Phe Phe Phe
 245

<210>23

<211>265

<212>PRT

<213>Chlamydia pneumoniae

<400>23

Gly Ile Arg Val Phe Phe Leu Lys Asn Lys Tyr Gly Leu Leu Lys Gly
 1 5 10 15
 Met Tyr Gln Glu Asn Leu Arg Leu Leu Glu Arg Leu Leu Tyr Asn Ser
 20 25 30
 Val Gln Lys Ser Tyr Ala Asp Arg Leu Phe Ser Tyr Glu Lys Thr Lys
 35 40 45
 Met Val His Asp Thr Pro Leu Ile Pro Trp Glu Glu Asp Lys Glu Lys
 50 55 60
 Cys Ala Glu Ala Glu Lys Ala Phe Leu Glu Gln Gln Lys Ile Leu Leu
 65 70 75 80
 Asp Tyr Gly Lys Ser Ile Phe Trp Leu Asn Glu Asn Asp Glu Ile Asn
 85 90 95
 Leu Asn Asp Pro Trp Ser Trp Gly Leu Asn Thr Val Arg Thr Arg Lys
 100 105 110
 Val Phe Gln Glu Val Asp Asp Ser Glu Arg Trp Asn His Lys Val Leu
 115 120 125
 Ile Gln Lys Leu Glu Asp Asp Tyr Glu Lys Leu Leu Glu Glu Ser Ser
 130 135 140
 Lys Glu Ser Thr Glu Ala Asn Lys Lys Leu Leu Ser Asp Leu Val Asp
 145 150 155 160
 Arg Leu Glu Asp Ala Lys Thr Lys Phe Phe Leu Lys Lys Gln Glu Glu
 165 170 175
 Val Glu Thr Arg Val Lys Asp Leu Arg Ala Arg Tyr Gly Gly Thr Val
 180 185 190
 Asp Pro Lys Gln Asp Thr Glu Ala Lys Lys Lys Val Glu Leu Glu Ala
 195 200 205
 Ser Leu Glu Thr Phe Leu Asp Ser Ile Glu Ser Glu Leu Val Gln Cys
 210 215 220
 Leu Glu Asp Gln Asp Ile Tyr Trp Lys Glu Gln Asp Val Lys Asp Leu
 225 230 235 240
 Ala Arg Thr Gln Glu Leu Glu Glu Gln Asp Ile Glu Ala Lys Arg Glu
 245 250 255
 Glu Ala Ala Glu Asp Leu Arg Lys Ser

260 265

<210>24
 <211>277
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>24

Glu Ser Leu Asn Glu Arg Leu Lys Lys Ser Lys Thr Met Leu Asp Arg
 1 5 10 15
 Ala Lys Trp His Ile Glu Asn Ala Glu Asp Ser Ile Thr Trp Trp Thr
 20 25 30
 Ser Gln Ile Glu Met Lys Asp Met Lys Ala Arg Leu Lys Ile Leu Lys
 35 40 45
 Glu Asp Ile Thr Ser Val Leu Pro Glu Ile Asp Glu Ile Glu Thr Cys
 50 55 60
 Leu Ser Leu Glu Glu Leu Pro Leu Leu Thr Thr Arg Glu Leu Leu Thr
 65 70 75 80
 Lys Ser Tyr Leu Lys Phe Lys Ile Cys Ser Glu Thr Leu Leu Lys Met
 85 90 95
 Thr Ser Val Phe Glu Asn Asn Ile Tyr Val Gln Glu Tyr Glu Val Gln
 100 105 110
 Leu Gln Asn Leu Gly Phe Lys Leu Gln Gly Ile Ser Gln Arg Phe Gly
 115 120 125
 Lys Lys Gln Asp Asp Phe Ala Asn Leu Glu Glu Gln Val Ala Leu Gln
 130 135 140
 Lys Lys Arg Leu Arg Glu Leu Thr Gln Asn Phe Glu Ile Gln Gly Phe
 145 150 155 160
 Asn Phe Met Lys Glu Asp Phe Lys Ala Ala Ala Lys Asp Leu Tyr Ile
 165 170 175
 Arg Ser Thr Ala Glu Gln Lys Met Asn Phe Asp Val Pro Cys Met Glu
 180 185 190
 Leu Phe Arg Arg Tyr His Glu Glu Val Asn Lys Pro Leu Leu Glu Leu
 195 200 205
 Met Tyr Asn Cys Ala Asp Ser Tyr Arg Asp Ala Lys Lys Lys Leu Cys
 210 215 220
 Ser Leu Arg Leu Asp Glu Lys Glu Leu Leu Gln Lys Glu Ile Lys Lys
 225 230 235 240
 Glu Glu Phe Tyr Gln Lys Lys Gln Gln Arg His Ala Asp Arg Ser Arg
 245 250 255
 His Thr Arg Tyr Gln Lys Leu Arg Ile Ala Glu Glu Leu Ala Leu Glu
 260 265 270
 Leu Lys Lys Lys Ile
 275

<210>25
 <211>202
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>25

Leu Leu Ser Leu Ser Asn Leu Leu Tyr Trp Lys Glu Ser Pro Leu Arg
 1 5 10 15
 Glu Lys Lys Val Val Met Lys Ile Pro Leu Arg Phe Leu Leu Ile Ser
 20 25 30
 Leu Val Pro Thr Leu Ser Met Ser Asn Leu Leu Gly Ala Ala Thr Thr
 35 40 45
 Glu Glu Leu Ser Ala Ser Asn Ser Phe Asp Gly Thr Thr Ser Thr Thr
 50 55 60
 Ser Phe Ser Ser Lys Thr Ser Ser Ala Thr Asp Gly Thr Asn Tyr Val
 65 70 75 80
 Phe Lys Asp Ser Val Val Ile Glu Asn Val Pro Lys Thr Gly Glu Thr
 85 90 95
 Gln Ser Thr Ser Cys Phe Lys Asn Asp Ala Ala Ala Gly Asp Leu Asn
 100 105 110
 Phe Leu Gly Gly Gly Phe Ser Phe Thr Phe Ser Asn Ile Asp Ala Thr
 115 120 125
 Thr Ala Ser Gly Ala Ala Ile Gly Ser Glu Ala Ala Asn Lys Thr Val

130 135 140
 Thr Leu Ser Gly Phe Ser Ala Leu Ser Phe Leu Lys Ser Pro Ala Ser
 145 150 155 160
 Thr Val Thr Asn Gly Leu Gly Ala Ile Asn Val Lys Gly Asn Leu Ser
 165 170 175
 Leu Leu Asp Asn Asp Lys Val Leu Ile Gln Asp Asn Phe Ser Thr Gly
 180 185 190
 Asp Gly Gly Gln Leu Ile Val Gln Ala Pro
 195 200

<210>26

<211>199

<212>PRT

<213>Chlamydia pneumoniae

<400>26

Gly Ile Asp Ser Gly Gln Phe Leu Asn Arg Arg Trp Arg Thr Ile Asn
 1 5 10 15
 Cys Ala Gly Ser Leu Lys Ile Ala Asn Asn Lys Ser Leu Ser Phe Ile
 20 25 30
 Gly Asn Ser Ser Thr Arg Gly Gly Ala Ile His Thr Lys Asn Leu
 35 40 45
 Thr Leu Ser Ser Gly Gly Glu Thr Leu Phe Gln Gly Asn Thr Ala Pro
 50 55 60
 Thr Ala Ala Gly Lys Gly Gly Ala Ile Ala Ile Ala Asp Ser Gly Thr
 65 70 75 80
 Leu Ser Ile Ser Gly Asp Ser Gly Asp Ile Ile Phe Glu Gly Asn Thr
 85 90 95
 Ile Gly Ala Thr Gly Thr Val Ser His Ser Ala Ile Asp Leu Gly Thr
 100 105 110
 Ser Ala Lys Ile Thr Ala Leu Arg Ala Ala Gln Gly His Thr Ile Tyr
 115 120 125
 Phe Tyr Asp Pro Ile Thr Val Thr Gly Ser Thr Ser Val Ala Asp Ala
 130 135 140
 Leu Asn Ile Asn Ser Pro Asp Thr Gly Asp Asn Lys Glu Tyr Thr Gly
 145 150 155 160
 Thr Ile Val Phe Ser Gly Glu Lys Leu Thr Glu Ala Glu Ala Lys Asp
 165 170 175
 Glu Lys Asn Arg Thr Ser Lys Leu Leu Gln Asn Val Ala Phe Lys Asn
 180 185 190
 Gly Thr Val Val Leu Lys Arg
 195

<210>27

<211>483

<212>PRT

<213>Chlamydia pneumoniae

<400>27

Lys Gly Asp Val Val Leu Ser Ala Asn Gly Phe Ser Gln Asp Ala Asn
 1 5 10 15
 Ser Lys Leu Ile Met Asp Leu Gly Thr Ser Leu Val Ala Asn Thr Glu
 20 25 30
 Ser Ile Glu Leu Thr Asn Leu Glu Ile Asn Ile Asp Ser Leu Arg Asn
 35 40 45
 Gly Lys Lys Ile Lys Leu Ser Ala Ala Thr Ala Gln Lys Asp Ile Arg
 50 55 60
 Ile Asp Arg Pro Val Val Leu Ala Ile Ser Asp Glu Ser Phe Tyr Gln
 65 70 75 80
 Asn Gly Phe Leu Asn Glu Asp His Ser Tyr Asp Gly Ile Leu Glu Leu
 85 90 95
 Asp Ala Gly Lys Asp Ile Val Ile Ser Ala Asp Ser Arg Ser Ile Asp
 100 105 110
 Ala Val Gln Ser Pro Tyr Gly Tyr Gln Gly Lys Trp Thr Ile Asn Trp
 115 120 125
 Ser Thr Asp Asp Lys Lys Ala Thr Val Ser Trp Ala Lys Gln Ser Phe
 130 135 140
 Asn Pro Thr Ala Glu Gln Glu Ala Pro Leu Val Pro Asn Leu Leu Trp

145 150 155 160
 Gly Ser Phe Ile Asp Val Arg Ser Phe Gln Asn Phe Ile Glu Leu Gly
 165 170 175
 Thr Glu Gly Ala Pro Tyr Glu Lys Arg Phe Trp Val Ala Gly Ile Ser
 180 185 190
 Asn Val Leu His Arg Ser Gly Arg Glu Asn Gln Arg Lys Phe Arg His
 195 200 205
 Val Ser Gly Gly Ala Val Val Gly Ala Ser Thr Arg Met Pro Gly Gly
 210 215 220
 Asp Thr Leu Ser Leu Gly Phe Ala Gln Leu Phe Ala Arg Asp Lys Asp
 225 230 235 240
 Tyr Phe Met Asn Thr Asn Phe Ala Lys Thr Tyr Ala Gly Ser Leu Arg
 245 250 255
 Leu Gln His Asp Ala Ser Leu Tyr Ser Val Val Ser Ile Leu Leu Gly
 260 265 270
 Glu Gly Gly Leu Arg Glu Ile Leu Leu Pro Tyr Val Ser Lys Thr Leu
 275 280 285
 Pro Cys Ser Phe Tyr Gly Gln Leu Ser Tyr Gly His Thr Asp His Arg
 290 295 300
 Met Lys Thr Glu Ser Leu Pro Pro Pro Pro Pro Thr Leu Ser Thr Asp
 305 310 315 320
 His Thr Ser Trp Gly Gly Tyr Val Trp Ala Gly Glu Leu Gly Thr Arg
 325 330 335
 Val Ala Val Glu Asn Thr Ser Gly Arg Gly Phe Phe Gln Glu Tyr Thr
 340 345 350
 Pro Phe Val Lys Val Gln Ala Val Tyr Ala Arg Gln Asp Ser Phe Val
 355 360 365
 Glu Leu Gly Ala Ile Ser Arg Asp Phe Ser Asp Ser His Leu Tyr Asn
 370 375 380
 Leu Ala Ile Pro Leu Gly Ile Lys Leu Glu Lys Arg Phe Ala Glu Gln
 385 390 395 400
 Tyr Tyr His Val Val Ala Met Tyr Ser Pro Asp Val Cys Arg Ser Asn
 405 410 415
 Pro Lys Cys Thr Thr Thr Leu Leu Ser Asn Gln Gly Ser Trp Lys Thr
 420 425 430
 Lys Gly Ser Asn Leu Ala Arg Gln Ala Gly Ile Val Gln Ala Ser Gly
 435 440 445
 Phe Arg Ser Leu Gly Ala Ala Ala Glu Leu Phe Gly Asn Phe Gly Phe
 450 455 460
 Glu Trp Arg Gly Ser Ser Arg Ser Tyr Asn Val Asp Ala Gly Ser Lys
 465 470 475 480
 Ile Lys Phe

<210>28

<211>177

<212>PRT

<213>Chlamydia pneumoniae

<400>28

Met Lys Ser Ser Phe Pro Lys Phe Val Phe Ser Thr Phe Ala Ile Phe
 1 5 10 15
 Pro Leu Ser Met Ile Ala Thr Glu Thr Val Leu Asp Ser Ser Ala Ser
 20 25 30
 Phe Asp Gly Asn Lys Asn Gly Asn Phe Ser Val Arg Glu Ser Gln Glu
 35 40 45
 Asp Ala Gly Thr Thr Tyr Leu Phe Lys Gly Asn Val Thr Leu Glu Asn
 50 55 60
 Ile Pro Gly Thr Gly Thr Ala Ile Thr Lys Ser Cys Phe Asn Asn Thr
 65 70 75 80
 Lys Gly Asp Leu Thr Phe Thr Gly Asn Gly Asn Ser Leu Leu Phe Gln
 85 90 95
 Thr Val Asp Ala Gly Thr Val Ala Gly Ala Ala Val Asn Ser Ser Val
 100 105 110
 Val Asp Lys Ser Thr Thr Phe Ile Gly Phe Ser Ser Leu Ser Phe Ile
 115 120 125

Ala Ser Pro Gly Ser Ser Ile Thr Thr Gly Lys Gly Ala Val Ser Cys
 130 135 140
 Ser Thr Gly Ser Leu Ser Leu Thr Lys Met Ser Val Cys Ser Ser Ala
 145 150 155 160
 Lys Thr Phe Gln Arg Ile Met Ala Val Leu Ser Pro Gln Lys Leu Phe
 165 170 175
 His

<210>29

<211>597

<212>PRT

<213>Chlamydia pneumoniae

<400>29

Leu Glu Phe Asp Lys Asn Val Ser Leu Leu Phe Ser Lys Asn Phe Ser
 1 5 10 15
 Thr Asp Asn Gly Gly Ala Ile Thr Ala Lys Thr Leu Ser Leu Thr Gly
 20 25 30
 Thr Thr Met Ser Ala Leu Phe Ser Glu Asn Thr Ser Ser Lys Lys Gly
 35 40 45
 Gly Ala Ile Gln Thr Ser Asp Ala Leu Thr Ile Thr Gly Asn Gln Gly
 50 55 60
 Glu Val Ser Phe Ser Asp Asn Thr Ser Ser Asp Ser Gly Ala Ala Ile
 65 70 75 80
 Phe Thr Glu Ala Ser Val Thr Ile Ser Asn Asn Ala Lys Val Ser Phe
 85 90 95
 Ile Asp Asn Lys Val Thr Gly Ala Ser Ser Ser Thr Thr Gly Asp Met
 100 105 110
 Ser Gly Gly Ala Ile Cys Ala Tyr Lys Thr Ser Thr Asp Thr Lys Val
 115 120 125
 Thr Leu Thr Gly Asn Gln Met Leu Leu Phe Ser Asn Asn Thr Ser Thr
 130 135 140
 Thr Ala Gly Gly Ala Ile Tyr Val Lys Lys Leu Glu Leu Ala Ser Gly
 145 150 155 160
 Gly Leu Thr Leu Phe Ser Arg Asn Ser Val Asn Gly Gly Thr Ala Pro
 165 170 175
 Lys Gly Gly Ala Ile Ala Ile Glu Asp Ser Gly Glu Leu Ser Leu Ser
 180 185 190
 Ala Asp Ser Gly Asp Ile Val Phe Leu Gly Asn Thr Val Thr Ser Thr
 195 200 205
 Thr Pro Gly Thr Asn Arg Ser Ser Ile Asp Leu Gly Thr Ser Ala Lys
 210 215 220
 Met Thr Ala Leu Arg Ser Ala Ala Gly Arg Ala Ile Tyr Phe Tyr Asp
 225 230 235 240
 Pro Ile Thr Thr Gly Ser Ser Thr Thr Val Thr Asp Val Leu Lys Val
 245 250 255
 Asn Glu Thr Pro Ala Asp Ser Ala Leu Gln Tyr Thr Gly Asn Ile Ile
 260 265 270
 Phe Thr Gly Glu Lys Leu Ser Glu Thr Glu Ala Ala Asp Ser Lys Asn
 275 280 285
 Leu Thr Ser Lys Leu Leu Gln Pro Val Thr Leu Ser Gly Gly Thr Leu
 290 295 300
 Ser Leu Lys His Gly Val Thr Leu Gln Thr Gln Ala Phe Thr Gln Gln
 305 310 315 320
 Ala Asp Ser Arg Leu Glu Met Asp Val Gly Thr Thr Leu Glu Pro Ala
 325 330 335
 Asp Thr Ser Thr Ile Asn Asn Leu Val Ile Asn Ile Ser Ser Ile Asp
 340 345 350
 Gly Ala Lys Lys Ala Lys Ile Glu Thr Lys Ala Thr Ser Lys Asn Leu
 355 360 365
 Thr Leu Ser Gly Thr Ile Thr Leu Leu Asp Pro Thr Gly Thr Phe Tyr
 370 375 380
 Glu Asn His Ser Leu Arg Asn Pro Gln Ser Tyr Asp Ile Leu Glu Leu
 385 390 395 400
 Lys Ala Ser Gly Thr Val Thr Ser Thr Ala Val Thr Pro Asp Pro Ile

405 410 15
 Met Gly Glu Lys Phe His Tyr Gly Tyr Gln Gly Thr Trp Gly Pro Ile
 420 425 430
 Val Trp Gly Thr Gly Ala Ser Thr Thr Ala Thr Phe Asn Trp Thr Lys
 435 440 445
 Thr Gly Tyr Ile Pro Asn Pro Glu Arg Ile Gly Ser Leu Val Pro Asn
 450 455 460
 Ser Leu Trp Asn Ala Phe Ile Asp Ile Ser Ser Leu His Tyr Leu Met
 465 470 475 480
 Glu Thr Ala Asn Glu Gly Leu Gln Gly Asp Arg Ala Phe Trp Cys Ala
 485 490 495
 Gly Leu Ser Asn Phe Phe His Lys Asp Ser Thr Lys Thr Arg Arg Gly
 500 505 510
 Phe Arg His Leu Ser Gly Gly Tyr Val Ile Gly Gly Asn Leu His Thr
 515 520 525
 Cys Ser Asp Lys Ile Leu Ser Ala Ala Phe Cys Gln Leu Phe Gly Arg
 530 535 540
 Asp Arg Asp Tyr Phe Val Ala Lys Asn Gln Arg Tyr Ser Leu Arg Arg
 545 550 555 560
 Asn Ser Leu Leu Pro Ala Gln Arg Asn Leu Tyr Leu Ser Ser Leu Gln
 565 570 575
 Thr Thr Ala Leu Phe Val Val Leu Cys Ser Tyr Arg Asp Ser Cys Ser
 580 585 590
 Leu Phe Arg Lys Pro
 595

<210>30

<211>230

<212>PRT

<213>Chlamydia pneumoniae

<400>30

Leu Arg Ile Lys Gly Thr Val Tyr Gly Gly Thr Leu Tyr Tyr Gln His
 1 5 10 15
 Asn Glu Thr Tyr Ile Ser Leu Pro Cys Lys Leu Arg Pro Cys Ser Leu
 20 25 30
 Ser Tyr Val Pro Thr Glu Ile Pro Val Leu Phe Ser Gly Asn Leu Ser
 35 40 45
 Tyr Thr His Thr Asp Asn Asp Leu Lys Thr Lys Tyr Thr Tyr Pro
 50 55 60
 Thr Val Lys Gly Ser Trp Gly Asn Asp Ser Phe Ala Leu Glu Phe Gly
 65 70 75 80
 Gly Arg Ala Pro Ile Cys Leu Asp Glu Ser Ala Leu Phe Glu Gln Tyr
 85 90 95
 Met Pro Phe Met Lys Leu Gln Phe Val Tyr Ala His Gln Glu Gly Phe
 100 105 110
 Lys Glu Gln Gly Thr Glu Ala Arg Glu Phe Gly Ser Ser Arg Leu Val
 115 120 125
 Asn Leu Ala Leu Pro Ile Gly Ile Arg Phe Asp Lys Glu Ser Asp Cys
 130 135 140
 Gln Asp Ala Thr Tyr Asn Leu Thr Leu Gly Tyr Thr Val Asp Leu Val
 145 150 155 160
 Arg Ser Asn Pro Asp Cys Thr Thr Thr Leu Arg Ile Ser Gly Asp Ser
 165 170 175
 Trp Lys Thr Phe Gly Thr Asn Leu Ala Arg Gln Ala Leu Val Leu Arg
 180 185 190
 Ala Gly Asn His Phe Cys Phe Asn Ser Asn Phe Glu Ala Phe Ser Gln
 195 200 205
 Phe Ser Phe Glu Leu Arg Gly Ser Ser Arg Asn Tyr Asn Val Asp Leu
 210 215 220
 Gly Ala Lys Tyr Gln Phe
 225 230

<210>31

<211>427

<212>PRT

<213>Chlamydia pneumoniae

<400>31

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Met Arg Ser Ser Phe Ser Leu Leu Leu Ile Ser Ser Ser Leu Ala Phe
 1          5          10          15
Pro Leu Leu Met Ser Val Ser Ala Asp Ala Ala Asp Leu Thr Leu Gly
          20          25          30
Ser Arg Asp Ser Tyr Asn Gly Asp Thr Ser Thr Thr Glu Phe Thr Pro
          35          40          45
Lys Ala Ala Thr Ser Asp Ala Ser Gly Thr Thr Tyr Ile Leu Asp Gly
          50          55          60
Asp Val Ser Ile Ser Gln Ala Gly Lys Gln Thr Ser Leu Thr Thr Ser
          65          70          75          80
Cys Phe Ser Asn Thr Ala Gly Asn Leu Thr Phe Leu Gly Asn Gly Phe
          85          90          95
Ser Leu His Phe Asp Asn Ile Ile Ser Ser Thr Val Ala Gly Val Val
          100          105          110
Val Ser Asn Thr Ala Ala Ser Gly Ile Thr Lys Phe Ser Gly Phe Ser
          115          120          125
Thr Leu Arg Met Leu Ala Ala Pro Arg Thr Thr Gly Lys Gly Ala Ile
          130          135          140
Lys Ile Thr Asp Gly Leu Val Phe Glu Ser Ile Gly Asn Leu Asp Leu
          145          150          155          160
Asn Glu Asn Ala Ser Ser Glu Asn Gly Gly Ala Ile Asn Thr Lys Thr
          165          170          175
Leu Ser Leu Thr Gly Ser Thr Arg Phe Val Ala Phe Leu Gly Asn Ser
          180          185          190
Ser Ser Gln Gln Gly Gly Ala Ile Tyr Ala Ser Gly Asp Ser Val Ile
          195          200          205
Ser Glu Asn Ala Gly Ile Leu Ser Phe Gly Asn Asn Ser Ala Thr Thr
          210          215          220
Ser Gly Gly Ala Ile Ser Ala Glu Gly Asn Leu Val Ile Ser Asn Asn
          225          230          235          240
Gln Asn Ile Phe Phe Asp Gly Cys Lys Ala Thr Thr Asn Gly Gly Ala
          245          250          255
Ile Asp Cys Asn Lys Ala Gly Ala Asn Pro Asp Pro Ile Leu Thr Leu
          260          265          270
Ser Gly Asn Glu Ser Leu His Phe Leu Asn Asn Thr Ala Gly Asn Ser
          275          280          285
Gly Gly Ala Ile Tyr Thr Lys Lys Leu Val Leu Ser Ser Gly Arg Gly
          290          295          300
Gly Val Leu Phe Ser Asn Asn Lys Ala Ala Asn Ala Thr Pro Lys Gly
          305          310          315          320
Gly Ala Ile Ala Ile Leu Asp Ser Gly Glu Ile Ser Ile Ser Ala Asp
          325          330          335
Leu Gly Asn Ile Ile Phe Glu Gly Asn Thr Thr Ser Thr Thr Gly Ser
          340          345          350
Pro Ala Ser Val Thr Arg Asn Ala Ile Asp Leu Ala Ser Asn Ala Lys
          355          360          365
Phe Leu Asn Leu Arg Ala Thr Arg Gly Asn Lys Val Ile Phe Tyr Asp
          370          375          380
Pro Ile Thr Ser Ser Gly Ala Thr Asp Lys Leu Ser Leu Asn Lys Ala
          385          390          395          400
Asp Ala Gly Ser Gly Asn Thr Tyr Glu Gly Tyr Ile Val Phe Ser Gly
          405          410          415
Glu Lys Leu Ser Glu Val Arg Asn Leu Thr Ile
          420          425

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<210>32

<211>507

<212>PRT

<213>Chlamydia pneumoniae

<400>32

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Arg Leu His Arg Phe Leu Trp Arg Glu Thr Leu Arg Ser Lys Lys Pro
 1          5          10          15
Asp Asn Leu Lys Ser Thr Phe Thr Gln Ala Val Glu Leu Ala Ala Gly
          20          25          30

```

Ala Leu Val Leu Lys Asp Gly Val Thr Val Val Ala Asn Thr Ile Thr
 35 40 45
 Gln Val Glu Gly Ser Lys Val Val Met Asp Gly Gly Thr Thr Phe Glu
 50 55 60
 Ala Ser Ala Glu Gly Val Thr Leu Asn Gly Leu Ala Ile Asn Ile Asp
 65 70 75 80
 Ser Leu Asp Gly Thr Asn Lys Ala Ile Ile Lys Ala Thr Ala Ala Ser
 85 90 95
 Lys Asp Val Ala Leu Ser Gly Pro Ile Met Leu Val Asp Ala Gln Gly
 100 105 110
 Asn Tyr Tyr Glu His His Asn Leu Ser Gln Gln Gln Val Phe Ala Leu
 115 120 125
 Ile Glu Leu Ser Ala Gln Gly Thr Met Thr Thr Thr Asp Ile Pro Asp
 130 135 140
 Thr Pro Ile Leu Asn Thr Thr Asn His Tyr Gly Ile Lys Gly Thr Gly
 145 150 155 160
 Ile Ile Val Trp Val Asp Asp Ala Thr Ala Lys Thr Lys Asn Ala Thr
 165 170 175
 Leu Thr Trp Thr Lys Thr Gly Tyr Lys Pro Asn Pro Glu Arg Gln Gly
 180 185 190
 Pro Leu Val Pro Asn Ser Leu Trp Gly Ser Phe Val Asp Val Arg Ser
 195 200 205
 Ile Gln Ser Leu Met Asp Arg Ser Thr Ser Ser Leu Ser Ser Ser Thr
 210 215 220
 Asn Leu Trp Val Ser Gly Ile Ala Asp Phe Leu His Glu Asp Gln Lys
 225 230 235 240
 Gly Asn Gln Arg Ser Tyr Arg His Ser Ser Ala Gly Tyr Ala Leu Gly
 245 250 255
 Gly Gly Phe Phe Thr Ala Ser Glu Asn Phe Phe Asn Phe Ala Phe Cys
 260 265 270
 Gln Leu Phe Gly Tyr Asp Lys Asp His Leu Val Ala Lys Asn His Thr
 275 280 285
 His Val Tyr Ala Gly Ala Met Ser Tyr Arg His Leu Gly Glu Ser Lys
 290 295 300
 Thr Leu Ala Lys Ile Leu Ser Gly Asn Ser Asp Ser Leu Pro Phe Val
 305 310 315 320
 Phe Asn Ala Arg Phe Ala Tyr Gly His Thr Asp Asn Asn Met Thr Thr
 325 330 335
 Lys Tyr Thr Gly Tyr Ser Pro Val Lys Gly Ser Trp Gly Asn Asp Ala
 340 345 350
 Phe Gly Ile Glu Cys Gly Gly Ala Ile Pro Val Val Ala Ser Gly Arg
 355 360 365
 Arg Ser Trp Val Asp Thr His Thr Pro Phe Leu Asn Leu Glu Met Ile
 370 375 380
 Tyr Ala His Gln Asn Asp Phe Lys Glu Asn Gly Thr Glu Gly Arg Ser
 385 390 395 400
 Phe Gln Ser Glu Asp Leu Phe Asn Leu Ala Val Pro Val Gly Ile Lys
 405 410 415
 Phe Glu Lys Phe Ser Asp Lys Ser Thr Tyr Asp Leu Ser Ile Ala Tyr
 420 425 430
 Val Pro Asp Val Ile Arg Asn Asp Pro Gly Cys Thr Thr Thr Leu Met
 435 440 445
 Val Ser Gly Asp Ser Trp Ser Thr Cys Gly Thr Ser Leu Ser Arg Gln
 450 455 460
 Ala Leu Leu Val Arg Ala Gly Asn His His Ala Phe Ala Ser Asn Phe
 465 470 475 480
 Glu Val Phe Ser Gln Phe Glu Val Glu Leu Arg Gly Ser Ser Arg Ser
 485 490 495
 Tyr Ala Ile Asp Leu Gly Gly Arg Phe Gly Phe
 500 505

<210>33

<211>494

<212>PRT

<213>Chlamydia pneumoniae

<400>33

Met Lys Thr Ser Val Ser Met Leu Leu Ala Leu Leu Cys Ser Gly Ala
 1 5 10 15
 Ser Ser Ile Val Leu His Ala Ala Thr Thr Pro Leu Asn Pro Glu Asp
 20 25 30
 Gly Phe Ile Gly Glu Gly Asn Thr Asn Thr Phe Ser Pro Lys Ser Thr
 35 40 45
 Thr Asp Ala Ala Gly Thr Thr Tyr Ser Leu Thr Gly Glu Val Leu Tyr
 50 55 60
 Ile Asp Pro Gly Lys Gly Ser Ile Thr Gly Thr Cys Phe Val Glu
 65 70 75 80
 Thr Ala Gly Asp Leu Thr Phe Leu Gly Asn Gly Asn Thr Leu Lys Phe
 85 90 95
 Leu Ser Val Asp Ala Gly Ala Asn Ile Ala Val Ala His Val Gln Gly
 100 105 110
 Ser Lys Asn Leu Ser Phe Thr Asp Phe Leu Ser Leu Val Ile Thr Glu
 115 120 125
 Ser Pro Lys Ser Ala Val Thr Thr Gly Lys Gly Ser Leu Val Ser Leu
 130 135 140
 Gly Ala Val Gln Leu Gln Asp Ile Asn Thr Leu Val Leu Thr Ser Asn
 145 150 155 160
 Ala Ser Val Glu Asp Gly Gly Val Ile Lys Gly Asn Ser Cys Leu Ile
 165 170 175
 Gln Gly Ile Lys Asn Ser Ala Ile Phe Gly Gln Asn Thr Ser Ser Lys
 180 185 190
 Lys Gly Gly Ala Ile Ser Thr Thr Gln Gly Leu Thr Ile Glu Asn Asn
 195 200 205
 Leu Gly Thr Leu Lys Phe Asn Glu Asn Lys Ala Val Thr Ser Gly Gly
 210 215 220
 Ala Leu Asp Leu Gly Ala Ala Ser Thr Phe Thr Ala Asn His Glu Leu
 225 230 235 240
 Ile Phe Ser Gln Asn Lys Thr Ser Gly Asn Ala Ala Asn Gly Gly Ala
 245 250 255
 Ile Asn Cys Ser Gly Asp Leu Thr Phe Thr Asp Asn Thr Ser Leu Leu
 260 265 270
 Leu Gln Glu Asn Ser Thr Met Gln Asp Gly Gly Ala Leu Cys Ser Thr
 275 280 285
 Gly Thr Ile Ser Ile Thr Gly Ser Asp Ser Ile Asn Val Ile Gly Asn
 290 295 300
 Thr Ser Gly Gln Lys Gly Gly Ala Ile Ser Ala Ala Ser Leu Lys Ile
 305 310 315 320
 Leu Gly Gly Gln Gly Gly Ala Leu Phe Ser Asn Asn Val Val Thr His
 325 330 335
 Ala Thr Pro Leu Gly Gly Ala Ile Phe Ile Asn Thr Gly Gly Ser Leu
 340 345 350
 Gln Leu Phe Thr Gln Gly Gly Asp Ile Val Phe Glu Gly Asn Gln Val
 355 360 365
 Thr Thr Thr Ala Pro Asn Ala Thr Thr Lys Arg Asn Val Ile His Leu
 370 375 380
 Glu Ser Thr Ala Lys Trp Thr Gly Leu Ala Ala Ser Gln Gly Asn Ala
 385 390 395 400
 Ile Tyr Phe Tyr Asp Pro Ile Thr Thr Asn Asp Thr Gly Ala Ser Asp
 405 410 415
 Asn Leu Arg Ile Asn Glu Val Ser Ala Asn Gln Lys Leu Ser Gly Ser
 420 425 430
 Ile Val Phe Ser Gly Glu Arg Leu Ser Thr Ala Glu Ala Ile Ala Glu
 435 440 445
 Asn Leu Thr Ser Arg Ile Asn Gln Pro Val Thr Leu Val Glu Gly Ser
 450 455 460
 Leu Val Leu Lys Gln Gly Val Thr Leu Ile Thr Gln Gly Phe Ser Gln
 465 470 475 480
 Glu Pro Glu Ser Thr Leu Leu Leu Asp Leu Gly Thr Ser Leu
 485 490

<210>34

<211>86

<212>PRT

<213>Chlamydia pneumoniae

<400>34

```

Met Val Ser Ala Phe Ile Asp Lys Phe Val Met Thr Ile Ser Ser Val
  1           5           10           15
Glu Ala Tyr Asn Glu Val Pro Arg Ser Lys Arg Ser Val Asp Ser Gly
          20           25           30
Ser Cys Glu Asn Pro Cys Val Ile Lys Val Thr Pro Cys Leu Ser Thr
          35           40           45
Lys Leu Pro Ser Thr Lys Val Thr Gly Trp Leu Ile Leu Glu Val Arg
          50           55           60
Phe Ser Ala Ile Ala Ser Ala Val Asp Asn Leu Ser Pro Glu Asn Thr
          65           70           75           80
Ile Asp Pro Glu Ser Phe
                      85

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<210>35

<211>450

<212>PRT

<213>Chlamydia pneumoniae

<400>35

```

Ala Ser Thr Glu Asp Ile Val Ile Thr Asn Leu Ser Ile Asn Ala Asp
  1           5           10           15
Thr Ile Tyr Gly Lys Asn Pro Ile Asn Ile Val Ala Ser Ala Ala Asn
          20           25           30
Lys Asn Ile Thr Leu Thr Gly Thr Leu Ala Leu Val Asn Ala Asp Gly
          35           40           45
Ala Phe Tyr Glu Asn His Thr Leu Gln Asp Ser Gln Asp Tyr Ser Phe
          50           55           60
Val Lys Leu Ser Pro Gly Ala Gly Gly Thr Ile Thr Gln Asp Ala
          65           70           75           80
Ser Gln Lys Pro Leu Glu Val Ala Pro Ser Arg Pro His Tyr Gly Tyr
          85           90           95
Gln Gly His Trp Asn Val Gln Val Ile Pro Gly Thr Gly Thr Gln Pro
          100          105          110
Ser Gln Ala Asn Leu Glu Trp Val Arg Thr Gly Tyr Leu Pro Asn Pro
          115          120          125
Glu Arg Gln Gly Ser Leu Val Pro Asn Ser Leu Trp Gly Ser Phe Val
          130          135          140
Asp Gln Arg Ala Ile Gln Glu Ile Met Val Asn Ser Ser Gln Ile Leu
          145          150          155          160
Cys Gln Glu Arg Gly Val Trp Gly Ala Gly Ile Ala Asn Phe Leu His
          165          170          175
Arg Asp Lys Ile Asn Glu His Arg Tyr Arg His Ser Gly Val Gly Tyr
          180          185          190
Leu Val Gly Val Gly Thr His Ala Phe Ser Asp Ala Thr Ile Asn Ala
          195          200          205
Ala Phe Cys Gln Leu Phe Ser Arg Asp Lys Asp Tyr Val Val Ser Lys
          210          215          220
Asn His Gly Thr Ser Tyr Ser Gly Val Val Phe Leu Glu Asp Thr Leu
          225          230          235          240
Glu Phe Arg Ser Pro Gln Gly Phe Tyr Thr Asp Ser Ser Ser Glu Ala
          245          250          255
Cys Cys Asn Gln Val Val Thr Ile Asp Met Gln Leu Ser Tyr Ser His
          260          265          270
Arg Asn Asn Asp Met Lys Thr Lys Tyr Thr Thr Tyr Pro Glu Ala Gln
          275          280          285
Gly Ser Trp Ala Asn Asp Val Phe Gly Leu Glu Phe Gly Ala Thr Thr
          290          295          300
Tyr Tyr Tyr Pro Asn Ser Thr Phe Leu Phe Asp Tyr Tyr Ser Pro Phe
          305          310          315          320
Leu Arg Leu Gln Cys Thr Tyr Ala His Gln Glu Asp Phe Lys Glu Thr
          325          330          335
Gly Gly Glu Val Arg His Phe Thr Ser Gly Asp Leu Phe Asn Leu Ala

```

340 345 350
 Val Pro Ile Gly Val Lys Phe Glu Arg Phe Ser Asp Cys Lys Arg Gly
 355 360 365
 Ser Tyr Glu Leu Thr Phe Ala Tyr Val Pro Asp Val Ile Arg Lys Asp
 370 375 380
 Pro Lys Ser Thr Ala Thr Leu Ala Ser Gly Ala Thr Trp Ser Thr His
 385 390 395 400
 Gly Asn Asn Leu Ser Arg Gln Gly Leu Gln Leu Arg Leu Gly Asn His
 405 410 415
 Cys Leu Ile Asn Pro Gly Ile Glu Val Phe Ser His Gly Ala Ile Glu
 420 425 430
 Leu Arg Gly Ser Ser Arg Asn Tyr Asn Ile Asn Leu Gly Gly Lys Tyr
 435 440 445
 Arg Phe
 450
 <210>36
 <211>661
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>36
 Lys Leu Trp Ser Asn Pro Asn Leu Arg Leu Met Lys Arg Cys Phe Leu
 1 5 10 15
 Phe Leu Ala Ser Phe Val Leu Met Gly Ser Ser Ala Asp Ala Leu Thr
 20 25 30
 His Gln Glu Ala Val Lys Lys Lys Asn Ser Tyr Leu Ser His Phe Lys
 35 40 45
 Ser Val Ser Gly Ile Val Thr Ile Glu Asp Gly Val Leu Asn Ile His
 50 55 60
 Asn Asn Leu Arg Ile Gln Ala Asn Lys Val Tyr Val Glu Asn Thr Val
 65 70 75 80
 Gly Gln Ser Leu Lys Leu Val Ala His Gly Asn Val Met Val Asn Tyr
 85 90 95
 Arg Ala Lys Thr Leu Val Cys Asp Tyr Leu Glu Tyr Tyr Glu Asp Thr
 100 105 110
 Asp Ser Cys Leu Leu Thr Asn Gly Arg Phe Ala Met Tyr Pro Trp Phe
 115 120 125
 Leu Gly Gly Ser Met Ile Thr Leu Thr Pro Glu Thr Ile Val Ile Arg
 130 135 140
 Lys Gly Tyr Ile Ser Thr Ser Glu Gly Pro Lys Lys Asp Leu Cys Leu
 145 150 155 160
 Ser Gly Asp Tyr Leu Glu Tyr Ser Ser Asp Ser Leu Leu Ser Ile Gly
 165 170 175
 Lys Thr Thr Leu Arg Val Cys Arg Ile Pro Ile Leu Phe Leu Pro Pro
 180 185 190
 Phe Ser Ile Met Pro Met Glu Ile Pro Lys Pro Pro Ile Asn Phe Arg
 195 200 205
 Gly Gly Thr Gly Gly Phe Leu Gly Ser Tyr Leu Gly Met Ser Tyr Ser
 210 215 220
 Pro Ile Ser Arg Lys His Phe Ser Ser Thr Phe Phe Leu Asp Ser Phe
 225 230 235 240
 Phe Lys His Gly Val Gly Met Gly Phe Asn Leu His Cys Ser Gln Lys
 245 250 255
 Gln Val Pro Glu Asn Val Phe Asn Met Lys Ser Tyr Tyr Ala His Arg
 260 265 270
 Leu Ala Ile Asp Met Ala Glu Ala His Asp Arg Tyr Arg Leu His Gly
 275 280 285
 Asp Phe Cys Phe Thr His Lys His Val Asn Phe Ser Gly Glu Tyr His
 290 295 300
 Leu Ser Asp Ser Trp Glu Thr Val Ala Asp Ile Phe Pro Asn Asn Phe
 305 310 315 320
 Met Leu Lys Asn Thr Gly Pro Thr Arg Val Asp Cys Thr Trp Asn Asp
 325 330 335
 Asn Tyr Phe Glu Gly Tyr Leu Thr Ser Ser Val Lys Val Asn Ser Phe
 340 345 350

Gln Asn Ala Asn Gln Leu Pro Tyr Leu Thr Leu Arg G Tyr Pro
 355 360 365
 Ile Ser Ile Tyr Asn Thr Gly Val Tyr Leu Glu Asn Ile Val Glu Cys
 370 375 380
 Gly Tyr Leu Asn Phe Ala Phe Ser Asp His Ile Val Gly Glu Asn Phe
 385 390 395 400
 Ser Ser Leu Arg Leu Ala Ala Arg Pro Lys Leu His Lys Thr Val Pro
 405 410 415
 Leu Pro Ile Gly Thr Leu Ser Ser Thr Leu Gly Ser Ser Leu Ile Tyr
 420 425 430
 Tyr Ser Asp Val Pro Glu Ile Ser Ser Arg His Ser Gln Leu Ser Ala
 435 440 445
 Lys Leu Gln Leu Asp Tyr Arg Phe Leu Leu His Lys Ser Tyr Ile Gln
 450 455 460
 Arg Arg His Ile Ile Glu Pro Phe Val Thr Phe Ile Thr Glu Thr Arg
 465 470 475 480
 Pro Leu Ala Lys Asn Glu Asp His Tyr Ile Phe Ser Ile Gln Asp Ala
 485 490 495
 Phe His Ser Leu Asn Leu Leu Lys Ala Gly Ile Asp Thr Ser Val Leu
 500 505 510
 Ser Lys Thr Asn Pro Arg Phe Pro Arg Ile His Ala Lys Leu Trp Thr
 515 520 525
 Thr His Ile Leu Ser Asn Thr Glu Ser Lys Pro Thr Phe Pro Lys Thr
 530 535 540
 Ala Cys Glu Leu Ser Leu Pro Phe Gly Lys Lys Asn Thr Val Ser Leu
 545 550 555 560
 Asp Ala Glu Trp Ile Trp Lys Lys His Cys Trp Asp His Met Asn Ile
 565 570 575
 Arg Trp Glu Trp Ile Gly Asn Asp Asn Val Ala Met Thr Leu Glu Ser
 580 585 590
 Leu His Arg Ser Lys Tyr Ser Leu Ile Lys Cys Asp Arg Glu Asn Phe
 595 600 605
 Ile Leu Asp Val Ser Arg Pro Ile Asp Gln Leu Leu Asp Ser Pro Leu
 610 615 620
 Ser Asp His Arg Asn Leu Ile Leu Gly Lys Leu Phe Val Arg Pro His
 625 630 635 640
 Pro Cys Trp Asn Tyr Arg Leu Ser Leu Arg Tyr Gly Trp His Arg Arg
 645 650 655
 Thr Leu Arg Thr Thr
 660

<210>37

<211>245

<212>PRT

<213>Chlamydia pneumoniae

<400>37

Glu Gln Arg Ser Lys Leu Asn Val Ala Leu Ala Leu Leu Glu Leu Gly
 1 5 10 15
 Cys Asp Thr Pro Lys Leu Leu Glu Tyr Ile Thr Glu Arg Leu Val Gln
 20 25 30
 Pro His Tyr Asn Glu Thr Leu Ala Leu Ser Phe Ser Lys Gly Arg Thr
 35 40 45
 Leu Gln Asn Trp Lys Arg Val Asn Ile Ile Val Pro Gln Asp Pro Gln
 50 55 60
 Glu Arg Glu Arg Leu Leu Ser Thr Thr Arg Gly Leu Glu Glu Gln Ile
 65 70 75 80
 Leu Thr Phe Leu Phe Arg Leu Pro Lys Glu Ala Tyr Leu Pro Cys Ile
 85 90 95
 Tyr Lys Leu Leu Ala Ser Gln Lys Thr Gln Leu Ala Thr Thr Ala Ile
 100 105 110
 Ser Phe Leu Ser His Thr Ser His Gln Glu Ala Leu Asp Leu Leu Phe
 115 120 125
 Gln Ala Ala Lys Leu Pro Gly Glu Pro Ile Ile Arg Ala Tyr Ala Asp
 130 135 140
 Leu Ala Ile Tyr Asn Leu Thr Lys Asp Pro Glu Lys Lys Arg Ser Leu

145
 His Asp Tyr Ala Lys Lys Leu Ile Gln Glu Thr Leu Leu Phe Val Asp
 165
 Thr Glu Asn Gln Arg Pro His Pro Ser Met Pro Tyr Leu Arg Tyr Gln
 180
 Val Thr Pro Glu Ser Arg Thr Lys Leu Met Leu Asp Ile Leu Glu Thr
 195
 Leu Ala Thr Ser Lys Ser Ser Glu Asp Ile Arg Leu Leu Ile Gln Leu
 210
 Met Thr Glu Gly Asp Ala Lys Asn Phe Pro Val Leu Ala Gly Leu Leu
 225
 Ile Lys Ile Val Glu
 245

<210>38

<211>348

<212>PRT

<213>Chlamydia pneumoniae

<400>38

Cys Ser Arg Ser Pro Tyr Pro Asn Ile Glu Ile Leu Ala Arg Gly Val
 1 5 10 15
 Glu His Arg Ser Met Gly Leu Phe His Leu Thr Leu Phe Gly Leu Leu
 20 25 30
 Leu Cys Ser Leu Pro Ile Ser Leu Val Ala Lys Phe Pro Glu Ser Val
 35 40 45
 Gly His Lys Ile Leu Tyr Ile Ser Thr Gln Ser Thr Gln Gln Ala Leu
 50 55 60
 Ala Thr Tyr Leu Glu Ala Leu Asp Ala Tyr Gly Asp His Asp Phe Phe
 65 70 75 80
 Val Leu Arg Lys Ile Gly Glu Asp Tyr Leu Lys Gln Ser Ile His Ser
 85 90 95
 Ser Asp Pro Gln Thr Arg Lys Ser Thr Ile Ile Gly Ala Gly Leu Ala
 100 105 110
 Gly Ser Ser Glu Ala Leu Asp Val Leu Ser Gln Ala Met Glu Thr Ala
 115 120 125
 Asp Pro Leu Gln Gln Leu Leu Val Leu Ser Ala Val Ser Gly His Leu
 130 135 140
 Gly Lys Thr Ser Asp Asp Leu Leu Phe Lys Ala Leu Ala Ser Pro Tyr
 145 150 155 160
 Pro Val Ile Arg Leu Glu Ala Ala Tyr Arg Leu Ala Asn Leu Lys Asn
 165 170 175
 Thr Lys Val Ile Asp His Leu His Ser Phe Ile His Lys Leu Pro Glu
 180 185 190
 Glu Ile Gln Cys Leu Ser Ala Ala Ile Phe Leu Arg Leu Glu Thr Glu
 195 200 205
 Glu Ser Asp Ala Tyr Ile Arg Asp Leu Leu Ala Ala Lys Lys Ser Ala
 210 215 220
 Ile Arg Ser Ala Thr Ala Leu Gln Ile Gly Glu Tyr Gln Gln Lys Arg
 225 230 235 240
 Phe Leu Pro Thr Leu Arg Asn Leu Leu Thr Ser Ala Ser Pro Gln Asp
 245 250 255
 Gln Glu Ala Ile Leu Tyr Ala Leu Gly Lys Leu Lys Asp Gly Gln Ser
 260 265 270
 Tyr Tyr Asn Ile Lys Lys Gln Leu Gln Lys Pro Asp Val Asp Val Thr
 275 280 285
 Leu Ala Ala Ala Gln Ala Leu Ile Ala Leu Gly Lys Glu Glu Asp Ala
 290 295 300
 Leu Pro Val Ile Lys Lys Gln Ala Leu Glu Glu Arg Pro Arg Ala Leu
 305 310 315 320
 Tyr Ala Leu Arg His Leu Pro Ser Glu Ile Gly Ile Pro Ile Ala Leu
 325 330 335
 Pro Ile Phe Leu Lys Thr Lys Asn Ser Glu Ala Ser
 340 345

<210>39

<211>196

<212>PRT

<213>Chlamydia pneumoniae

<400>39

```

Met Ser Leu Pro Leu Val Leu Gly Ser Ser Ser Pro Arg Arg Lys Phe
 1      5      10      15
Ile Leu Glu Lys Phe Arg Val Pro Phe Thr Val Ile Pro Ser Asn Phe
      20      25      30
Asp Glu Ser Lys Val Ser Tyr Ser Gly Asp Pro Ile Ala Tyr Thr Gln
      35      40      45
Glu Leu Ala Ala Gln Lys Ala Tyr Ala Val Ser Glu Leu His Ser Pro
      50      55      60
Cys Asp Cys Ile Ile Leu Thr Gly Asp Thr Ile Val Ser Tyr Asp Gly
      65      70      75      80
Arg Ile Phe Thr Lys Pro Gln Xaa Lys Ala Xaa Ala Ile Gln Met Leu
      85      90      95
Lys Thr Leu Arg Asn Gln Thr His Asp Val Val Thr Ser Ile Ala Val
      100      105      110
Leu His Lys Gly Lys Leu Leu Thr Gly Ser Glu Thr Ser Gln Ile Ser
      115      120      125
Leu Thr Met Ile Pro Asp His Arg Ile Glu Ser Tyr Ile Asp Thr Val
      130      135      140
Gly Thr Leu Asn Asn Cys Gly Ala Tyr Asp Val Cys His Gly Gly Leu
      145      150      155      160
Ile Leu Lys Lys Val His Gly Cys Val Tyr Asn Val Gln Gly Leu Pro
      165      170      175
Ile Gln Thr Leu Lys Tyr Leu Leu Glu Glu Leu Asn Ile Asp Leu Trp
      180      185      190
Asp Tyr Ser Ile
      195

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<210>40

<211>127

<212>PRT

<213>Chlamydia pneumoniae

<400>40

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Val Xaa Arg Asn Arg Lys Thr Gly Ile Asn Asp Gln Glu Ile Arg Ser
 1      5      10      15
Val Leu Gly Lys Met Leu Phe Gly Gly Asp Asp Ala Phe Lys Gln Ile
      20      25      30
Gln Ala Leu Ser Gly Gly Glu Thr Ala Arg Leu Leu Met Ala Gly Met
      35      40      45
Met Leu Glu Asn His Asn Val Leu Ile Leu Asp Glu Ala Asn Asn His
      50      55      60
Leu Asp Leu Glu Ser Val Ser Ala Leu Ser Trp Ala Ile Asn Asp Tyr
      65      70      75      80
Lys Gly Thr Ala Ile Phe Val Ser His Asp Arg Gly Leu Ile Gln Asp
      85      90      95
Cys Ala Thr Lys Leu Leu Ile Phe Asp Lys Asp Lys Ile Thr Phe Phe
      100      105      110
Asp Gly Thr Met Val Asp Tyr Thr Ala Gly His Lys Gln Leu Leu
      115      120      125

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<210>41

<211>432

<212>PRT

<213>Chlamydia pneumoniae

<400>41

```

Leu Tyr Ser Lys Gln His Phe Val Met Leu Ser Ala Met Ser Ile Val
 1      5      10      15
Leu Asp Lys Ile Gly Lys Ser Leu Gly Thr Arg Ile Leu Phe Asp Asp
      20      25      30
Val Ser Val Val Phe Asn Pro Gly Asn Cys Tyr Gly Leu Thr Gly Pro
      35      40      45
Asn Gly Ala Gly Lys Ser Thr Leu Leu Lys Ile Ile Met Gly Met Ile
      50      55      60
Glu Pro Thr Arg Gly Ser Ile Ser Leu Pro Lys Lys Val Gly Ile Leu

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65          70          75          80
Arg Gln Asn Ile Asp Ser Phe His Asp Thr Thr Val Leu Asp Cys Val
      85          90          95
Ile Met Gly Asn Thr Arg Leu Trp Glu Ala Leu Gln Arg Arg Asp Asn
      100         105         110
Leu Tyr Leu Gln Glu Phe Thr Asp Ala Ile Gly Met Glu Leu Gly Glu
      115         120         125
Ile Glu Glu Ile Ile Gly Glu Glu Asn Gly Tyr Arg Ala Asp Ser Glu
      130         135         140
Ala Glu Glu Leu Leu Thr Gly Ile Gly Ile Pro Asn Glu Met Phe Asp
145         150         155         160
Lys Lys Met Ala Met Ile Pro Ile Asp Leu Gln Phe Arg Val Leu Leu
      165         170         175
Cys Gln Ala Leu Phe Gly His Pro Glu Ala Leu Leu Leu Asp Glu Pro
      180         185         190
Thr Asn His Leu Asp Leu Tyr Ser Ile Asn Trp Leu Gly Asn Phe Leu
      195         200         205
Lys Asp Tyr Glu Gly Thr Val Ile Val Val Ser His Asp Arg His Phe
      210         215         220
Leu Asn Thr Ile Thr Thr His Ile Ala Asp Ile Asp Tyr Asp Thr Ile
225         230         235         240
Ile Ile Tyr Pro Gly Asn Tyr Asp Asp Met Val Glu Met Lys Thr Ala
      245         250         255
Ser Arg Glu Gln Glu Lys Ala Asp Ile Lys Ser Lys Glu Lys Lys Ile
      260         265         270
Ser Gln Leu Lys Glu Phe Val Ala Lys Phe Gly Ala Gly Ser Arg Ala
      275         280         285
Ser Gln Val Gln Ser Arg Leu Arg Glu Ile Lys Lys Leu Gln Pro Gln
      290         295         300
Glu Leu Lys Lys Ser Asn Ile Gln Arg Pro Tyr Ile Arg Phe Pro Leu
305         310         315         320
Ser Asp Lys Ser Ser Gly Lys Val Val Leu Ser Leu Glu Ala Ile Thr
      325         330         335
Lys Asp Tyr Gly Asp His Gln Val Ile His Pro Phe Ser Leu Glu Ile
      340         345         350
Tyr Gln Gly Asp Lys Leu Gly Ile Ile Gly Asn Asn Gly Leu Gly Lys
      355         360         365
Thr Thr Leu Met Lys Leu Leu Ala Gly Val Glu Ala Pro Ser Ser Gly
      370         375         380
Ser Ile Lys Leu Gly His Gln Ala Ile Cys Ser Tyr Phe Pro Gln Asn
385         390         395         400
His Ser Asp Val Leu Ala Asp Cys Gly Gln Glu Thr Leu Phe Glu Xaa
      405         410         415
Tyr Ala Ile Ala Lys Pro Glu Leu Thr Ile Lys Lys Ser Ala Val Cys
      420         425         430

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<210>42

<211>131

<212>PRT

<213>Chlamydia pneumoniae

<400>42

```

Arg Glu Val Met Ile Ala Ser Ile Tyr Ser Phe Leu Asp Tyr Leu Lys
 1          5          10          15
Met Val Lys Ser Ala Ser Pro His Thr Leu Arg Asn Tyr Cys Leu Asp
      20          25          30
Leu Asn Gly Leu Lys Ile Phe Leu Xaa Glu Arg Gly Asn Leu Ala Pro
      35          40          45
Ser Ser Pro Leu Gln Leu Ala Thr Glu Lys Arg Lys Val Ser Glu Leu
      50          55          60
Pro Phe Ser Leu Phe Thr Lys Glu His Val Arg Met Tyr Ile Ala Lys
      65          70          75          80
Leu Ile Glu Asn Gly Lys Ala Lys Arg Thr Ile Lys Arg Cys Leu Ser
      85          90          95
Ser Ile Lys Ser Phe Ala His Tyr Cys Val Ile Gln Lys Ile Leu Leu
      100         105         110

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Glu Asn Leu Arg Lys D Ser Thr Asp Leu Val Phe Leu A er Cys
 115 120 125
 Leu Pro Arg
 130
 <210>43
 <211>307
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>43
 Met Ser Ser Arg Glu Leu Ile Ile Leu Gly Cys Ser Ser Gln Gln Pro
 1 5 10 15
 Thr Arg Thr Arg Asn Gln Gly Ala Tyr Leu Phe Arg Trp Asn Gly Glu
 20 25 30
 Gly Leu Leu Phe Asp Pro Gly Glu Gly Thr Gln Arg Gln Phe Ile Phe
 35 40 45
 Ala Asn Ile Ala Pro Thr Thr Val Asn Arg Ile Phe Val Ser His Phe
 50 55 60
 His Gly Asp His Cys Leu Gly Leu Gly Ser Met Leu Met Arg Leu Asn
 65 70 75 80
 Leu Asp Lys Val Ser His Pro Ile His Cys Tyr Tyr Pro Ala Ser Gly
 85 90 95
 Lys Lys Tyr Phe Asp Arg Leu Arg Tyr Gly Thr Ile Tyr His Glu Thr
 100 105 110
 Ile Gln Val Val Glu His Pro Ile Ser Glu Glu Gly Ile Val Glu Asp
 115 120 125
 Phe Gly Ser Phe Arg Ile Glu Ala Gln Arg Leu Gln His Gln Val Asp
 130 135 140
 Thr Leu Gly Trp Arg Ile Thr Glu Pro Asp Thr Ile Lys Phe Leu Pro
 145 150 155 160
 Lys Glu Leu Glu Ser Arg Gly Ile Arg Gly Leu Ile Ile Gln Asp Leu
 165 170 175
 Ile Arg Asp Gln Glu Ile Ser Ile Gly Gly Ser Thr Val Tyr Leu Ser
 180 185 190
 Asp Val Ser Tyr Val Arg Lys Gly Asp Ser Ile Ala Ile Ile Ala Asp
 195 200 205
 Thr Leu Pro Cys Gln Ala Ala Ile Asp Leu Ala Lys Asn Ser Cys Met
 210 215 220
 Met Leu Cys Glu Ser Thr Tyr Leu Glu Gln His Arg His Leu Ala Glu
 225 230 235 240
 Ser His Phe His Met Thr Ala Lys Gln Ala Ala Thr Leu Ala Lys Arg
 245 250 255
 Ala Ala Thr Gln Lys Leu Ile Leu Thr His Phe Ser Ala Arg Tyr Leu
 260 265 270
 Asn Leu Asp Asp Phe Tyr Lys Glu Ala Ser Ala Val Phe Pro Asn Val
 275 280 285
 Ser Val Ala Gln Glu Tyr Arg Ser Tyr Pro Phe Pro Lys Asn Pro Leu
 290 295 300
 Leu Asn Lys
 305
 <210>44
 <211>440
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>44
 Ala Phe Gln Arg Ile Lys Arg Lys Tyr His Leu Ser Cys Arg Pro Ser
 1 5 10 15
 Arg Ser Trp Glu Asn Lys His Arg Ala His Ile Ala Lys Val Leu His
 20 25 30
 Arg Lys Phe Phe Arg Phe Ser Val Gly Gly Met Arg Asp Glu Ala Glu
 35 40 45
 Ile Lys Gly His Arg Arg Thr Tyr Ile Gly Ala Met Pro Gly Lys Met
 50 55 60
 Val Gln Ala Leu Lys Gln Ser Gln Ala Met Asn Pro Val Ile Met Ile
 65 70 75 80

Asp Glu Val Asp Ile Gly Ala Ser Tyr His Gly A ro Ala Ser
 85 90 95
 Ala Leu Leu Glu Val Leu Asp Pro Glu Gln Asn Lys Asp Phe Leu Asp
 100 105 110
 His Tyr Leu Asp Val Arg Val Asp Leu Ser Asn Val Leu Phe Ile Leu
 115 120 125
 Thr Ala Asn Val Leu Asp Thr Ile Pro Asp Pro Leu Leu Asp Arg Met
 130 135 140
 Glu Ile Leu Arg Leu Ser Gly Tyr Ile Leu Glu Lys Leu Gln Ile
 145 150 155 160
 Ala Lys Lys Tyr Leu Val Pro Lys Ala Arg Lys Glu Ile Gly Leu Thr
 165 170 175
 Ala Ser Glu Val Asn Phe Gln Pro Glu Ala Leu Lys Tyr Met Ile Asn
 180 185 190
 Asn Tyr Ala Arg Glu Ala Gly Val Arg Thr Leu Asn Gly Asn Ile Lys
 195 200 205
 Lys Val Leu Arg Lys Val Ala Leu Lys Ile Val Gln Asn Gln Glu Lys
 210 215 220
 Pro Lys Ser Lys Lys Ile Thr Phe Lys Ile Ser Ser Lys Asn Leu Gln
 225 230 235 240
 Thr Tyr Leu Gly Lys Pro Ile Phe Ser Ser Asp Arg Phe Tyr Glu Ser
 245 250 255
 Thr Pro Val Gly Val Ala Thr Gly Leu Ala Trp Thr Ser Leu Gly Gly
 260 265 270
 Ala Thr Leu Tyr Ile Glu Ser Val Gln Val Ser Ser Leu Lys Thr Asp
 275 280 285
 Met His Leu Thr Gly Gln Ala Gly Glu Val Met Lys Glu Ser Ser Gln
 290 295 300
 Ile Ala Trp Thr Tyr Leu His Ser Ala Leu His Arg Tyr Ala Pro Gly
 305 310 315 320
 Tyr Thr Phe Phe Pro Lys Ser Gln Val His Ile His Ile Pro Glu Gly
 325 330 335
 Ala Thr Pro Lys Asp Gly Pro Ser Ala Gly Ile Thr Met Val Thr Ser
 340 345 350
 Leu Leu Ser Leu Leu Leu Glu Thr Pro Val Val Asn Asn Leu Gly Met
 355 360 365
 Thr Gly Glu Ile Thr Leu Thr Gly Arg Val Leu Gly Val Gly Gly Ile
 370 375 380
 Arg Glu Lys Leu Ile Ala Ala Arg Arg Ser Arg Leu Asn Ile Leu Ile
 385 390 395 400
 Phe Pro Glu Asp Asn Arg Arg Asp Tyr Glu Glu Leu Pro Ala Tyr Leu
 405 410 415
 Lys Thr Gly Leu Lys Ile His Phe Val Ser His Tyr Asp Asp Val Leu
 420 425 430
 Lys Val Ala Phe Pro Lys Leu Lys
 435 440

<210>45

<211>424

<212>PRT

<213>Chlamydia pneumoniae

<400>45

Pro Ser Ile Arg Thr Ile Val Asp Ser Thr Thr Asn Ser Asp Ser Pro
 1 5 10 15
 Ile Leu Asp Pro Asn Pro Glu Asp Val Glu Lys Leu Leu Asp Glu Ser
 20 25 30
 Glu Glu Glu Ser Glu Asp Gln Ser Thr Glu Arg Leu Leu Pro Ser Glu
 35 40 45
 Leu Phe Ile Leu Pro Leu Asn Lys Arg Pro Phe Phe Pro Gly Met Ala
 50 55 60
 Ala Pro Ile Leu Ile Glu Ser Gly Pro Tyr Tyr Glu Val Leu Lys Val
 65 70 75 80
 Leu Ala Lys Ser Ser Gln Lys Tyr Ile Gly Leu Val Leu Thr Lys Lys
 85 90 95
 Glu Asn Ala Asp Ile Leu Lys Val Ser Phe Asn Gln Leu His Lys Thr

100 105 110
 Gly Val Ala Ala Arg Ile Leu Arg Ile Met Pro Ile Glu Gly Gly Ser
 115 120 125
 Ala Gln Val Leu Leu Ser Ile Glu Glu Arg Ile Arg Ile Ile Glu Pro
 130 135 140
 Ile Lys Asp Lys Tyr Leu Lys Ala Arg Val Ser Tyr His Ala Asp Asn
 145 150 155 160
 Lys Glu Leu Thr Glu Glu Leu Lys Ala Tyr Ser Ile Ser Ile Val Ser
 165 170 175
 Val Ile Lys Asp Leu Leu Lys Leu Asn Pro Leu Phe Lys Glu Glu Leu
 180 185 190
 Gln Ile Phe Leu Gly His Ser Asp Phe Thr Glu Pro Gly Lys Leu Ala
 195 200 205
 Asp Phe Ser Val Ala Leu Thr Thr Ala Thr Arg Glu Glu Leu Gln Glu
 210 215 220
 Val Leu Glu Thr Thr Asn Met His Asp Arg Ile Asp Lys Ala Leu Ile
 225 230 235 240
 Leu Leu Lys Lys Glu Leu Asp Leu Ser Arg Leu Gln Ser Ser Ile Asn
 245 250 255
 Gln Lys Ile Glu Ala Thr Ile Thr Lys Ser Gln Lys Glu Phe Phe Leu
 260 265 270
 Lys Glu Gln Leu Lys Thr Xaa Lys Lys Glu Leu Gly Leu Glu Lys Glu
 275 280 285
 Asp Arg Ala Ile Asp Ile Glu Lys Phe Ser Glu Arg Leu Arg Lys Arg
 290 295 300
 His Val Pro Asp Tyr Ala Met Glu Val Ile Gln Asp Glu Ile Glu Lys
 305 310 315 320
 Leu Gln Thr Leu Glu Thr Ser Ser Ala Glu Tyr Thr Val Cys Arg Asn
 325 330 335
 Tyr Leu Asp Trp Leu Thr Ile Ile Pro Trp Gly Ile Gln Ser Lys Glu
 340 345 350
 Tyr His Asp Leu Lys Lys Ala Glu Ile Val Leu Asn Lys Asp His Tyr
 355 360 365
 Gly Leu Asp Glu Ile Lys Gln Arg Ile Leu Glu Leu Ile Ser Val Gly
 370 375 380
 Lys Leu Ser Lys Gly Leu Lys Gly Ser Ile Ile Cys Leu Val Gly Pro
 385 390 395 400
 Pro Gly Val Gly Lys Thr Ser Ile Gly Arg Thr Leu Leu Lys Ser Cys
 405 410 415
 Ile Glu Ser Ser Ser Val Ser Gln
 420

<210>46

<211>122

<212>PRT

<213>Chlamydia pneumoniae

<400>46

Arg Met Phe Leu Gln Phe Phe His Pro Ile Val Phe Ser Asp Gln Ser
 1 5 10 15
 Leu Ser Phe Leu Pro Tyr Leu Gly Lys Ser Ser Gly Ile Ile Glu Lys
 20 25 30
 Cys Ser Asn Ile Val Glu His Tyr Leu His Leu Gly Gly Asp Thr Ser
 35 40 45
 Val Ile Ile Thr Gly Val Ser Gly Ala Thr Phe Leu Ser Val Asp His
 50 55 60
 Ala Leu Pro Ile Ser Lys Ser Glu Lys Ile Ile Lys Ile Leu Ser Tyr
 65 70 75 80
 Ile Leu Ile Leu Pro Leu Ile Leu Ala Leu Phe Ile Lys Ile Val Leu
 85 90 95
 Arg Ile Ile Leu Phe Xaa Lys Tyr Arg Gly Leu Ile Xaa Asp Val Lys
 100 105 110
 Lys Glu Asp Leu Glu Lys Asn Thr Tyr Thr
 115 120

<210>47

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>47

```

Ser Asn Lys Asn Glu Arg Asn Glu Asn Ile Tyr Cys Phe Asn Leu Phe
 1          5          10          15
Arg Tyr Ile Arg Phe Phe Ala Ala Leu Asn Ile Arg Thr Asn Asp Gly
          20          25          30
Leu Arg Phe Cys Tyr Ser Tyr Ile Leu Leu Arg Pro Met Leu Leu Asp
          35          40          45
Ser Ser Leu Leu Arg Lys Gly Gln Glu Leu Leu Lys Lys Phe Gln
          50          55          60
Ile Lys Leu Arg Thr Thr Ser Ile Lys Ser Ser Leu Ile Ser Leu Arg
          65          70          75          80
Gln Gln Leu Gly Lys Arg Glu Ala Thr Gln Ser Asp Ile Leu Tyr Gly
          85          90          95
Thr Ser Arg Phe Gln Tyr Leu Asn Ser Phe Glu Ile Glu Asp Pro Arg
          100          105          110
Ile Pro Pro Thr Met Ala Ala Gln Leu Gln Glu Ile Ile Trp Ser Arg
          115          120          125
Ser Val Met Glu Leu Lys Ile Lys Phe Tyr Val Tyr Leu Asn Ser Glu
          130          135          140
Arg Asn Lys Thr Lys Pro
          145          150

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<210>48

<211>392

<212>PRT

<213>Chlamydia pneumoniae

<400>48

```

Met Asp Tyr Tyr Ser Ile Leu Gly Ile Ser Lys Thr Ala Ser Ala Glu
 1          5          10          15
Glu Ile Lys Lys Ala Tyr Arg Lys Leu Ala Val Lys Tyr His Pro Asp
          20          25          30
Lys Asn Pro Gly Asp Ala Ala Ala Glu Lys Arg Phe Lys Glu Val Ser
          35          40          45
Glu Ala Tyr Glu Val Leu Ser Asp Pro Gln Lys Arg Asp Ser Tyr Asp
          50          55          60
Arg Phe Gly Lys Asp Gly Pro Phe Ala Gly Ala Gly Gly Phe Gly Gly
          65          70          75          80
Ala Gly Gly Met Gly Asn Met Glu Asp Ala Leu Arg Thr Phe Met Gly
          85          90          95
Ala Phe Gly Gly Glu Phe Gly Gly Gly Ser Phe Phe Asp Gly Leu Phe
          100          105          110
Gly Gly Leu Gly Glu Ala Phe Gly Met Arg Ser Asp Pro Ala Gly Ala
          115          120          125
Arg Gln Gly Ala Ser Lys Lys Val His Ile Asn Leu Thr Phe Glu Glu
          130          135          140
Ala Ala His Gly Val Glu Lys Glu Leu Val Val Ser Gly Tyr Lys Ser
          145          150          155          160
Cys Glu Thr Cys Ser Gly Gln Gly Ala Val Asn Pro Gln Gly Ile Lys
          165          170          175
Ser Cys Glu Arg Cys Lys Gly Ser Gly Gln Val Val Gln Ser Arg Gly
          180          185          190
Phe Phe Ser Met Ala Ser Thr Cys Pro Glu Cys Gly Gly Glu Gly Arg
          195          200          205
Ile Ile Thr Asp Pro Cys Ser Ser Cys Arg Gly Gln Gly Arg Val Lys
          210          215          220
Asp Lys Arg Ser Val His Val His Ile Pro Ala Gly Val Asp Ser Gly
          225          230          235          240
Met Arg Leu Lys Met Glu Gly Tyr Gly Asp Ala Gly Gln Asn Gly Ala
          245          250          255
Pro Ser Gly Asp Leu Tyr Val Phe Ile Asp Val Glu Ser His Pro Val
          260          265          270
Phe Glu Arg Arg Gly Asp Asp Leu Ile Leu Glu Leu Pro Ile Gly Phe
          275          280          285

```

Val Asp Ala Ala Leu Met Lys Lys Glu Ile Pro Thr Leu Lys
 290 295 300
 Thr Glu Gly Ser Cys Arg Leu Thr Val Pro Glu Gly Ile Gln Ser Gly
 305 310 315 320
 Thr Ile Leu Lys Val Arg Asn Gln Gly Phe Pro Asn Val His Gly Lys
 325 330 335
 Gly Arg Gly Asp Leu Leu Val Arg Ile Ser Val Glu Thr Pro Gln Asn
 340 345 350
 Leu Ser Glu Glu Gln Lys Glu Leu Leu Arg Thr Phe Ala Ser Thr Glu
 355 360 365
 Lys Ala Glu Asn Phe Pro Lys Lys Arg Ser Phe Leu Asp Lys Ile Lys
 370 375 380
 Gly Phe Phe Ser Asp Phe Thr Val
 385 390
 <210>49
 <211>258
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>49
 Met Gly Val Val Gln Asn Gln Val Ile Ser Ser Ile Arg Asp Val Leu
 1 5 10 15
 Lys Leu Val Trp Glu Leu Arg Phe Ala Glu His Lys Met Leu Leu Leu
 20 25 30
 Ser Arg Gln Ser Gly Ser Gly Gly Thr Phe Gln Leu Ser Cys Ala Gly
 35 40 45
 His Glu Leu Ala Gly Val Leu Ala Gly Lys Ser Leu Ile Pro Gly Lys
 50 55 60
 Asp Trp Ser Phe Pro Tyr Tyr Arg Asp Gln Gly Phe Pro Ile Gly Leu
 65 70 75 80
 Gly Cys Asp Leu Ser Glu Ile Phe Ala Ser Phe Leu Ala Arg Thr Thr
 85 90 95
 Pro Asn His Ser Ser Ala Arg Met Met Pro Tyr His Tyr Ser His Lys
 100 105 110
 Lys Leu Arg Ile Cys Cys Gln Ser Ser Val Val Gly Thr Gln Phe Leu
 115 120 125
 Gln Ala Ala Gly Arg Ala Trp Ala Val Lys His Ser Ser Ala Asp Glu
 130 135 140
 Val Val Tyr Val Ser Gly Asp Gly Ala Thr Ser Gln Gly Glu Phe
 145 150 155 160
 His Glu Met Leu Asn Phe Val Ala Leu His Gln Leu Pro Leu Ile Thr
 165 170 175
 Val Ile Gln Asn Asn His Trp Ala Ile Ser Val Pro Phe Glu Asp Gln
 180 185 190
 Cys Gly Ala Asp Leu Ala Ser Leu Gly Arg Cys His Gln Gly Leu Ala
 195 200 205
 Val Tyr Glu Val Asp Gly Gly Asn Tyr Thr Ser Leu Thr Glu Thr Phe
 210 215 220
 Ser His Ala Val Asp Gln Ala Arg Gln His Ser Val Pro Ala Leu Ile
 225 230 235 240
 Leu Ile Asp Val Val Arg Leu Ser Ser His Ser Asn Ser Asp Asn Gln
 245 250 255
 Glu Lys

<210>50

<211>410

<212>PRT

<213>Chlamydia pneumoniae

<400>50

Met Asp Lys Asp Pro Leu Ile Leu Leu Glu Lys Glu Ala Ile Asn Val
 1 5 10 15
 Phe Gly Leu Ser Pro Phe Glu Ile Glu Glu Ile Lys Ala Glu Ala Gln
 20 25 30
 Glu Glu Val Arg Lys Ser Cys Glu Ile Ala Glu Ala Leu Pro Phe Pro
 35 40 45

Ser	Lys	Gly	Ser		Ser	His	Glu	Val	Phe	Ser	Pro	Thr	Glu	Thr	
50					55					60					
Leu	Ile	Asp	Tyr	Glu	Asn	Ser	Glu	Ser	Ala	Gln	Asn	Leu	Arg	Asn	Ser
65				70						75					80
Glu	Pro	Lys	Val	Met	Arg	Asp	Ala	Ile	Ser	Glu	Ala	Leu	Val	Glu	Glu
				85					90					95	
Met	Thr	Arg	Asp	Ser	Gly	Val	Ile	Val	Phe	Gly	Glu	Asp	Val	Ala	Gly
			100					105					110		
Asp	Lys	Gly	Gly	Val	Phe	Gly	Val	Thr	Arg	Asn	Leu	Thr	Glu	Lys	Phe
		115					120					125			
Gly	Pro	Gln	Arg	Cys	Phe	Asn	Ser	Pro	Leu	Ala	Glu	Ala	Thr	Ile	Ile
130						135					140				
Gly	Thr	Ala	Ile	Gly	Met	Ala	Leu	Asp	Gly	Ile	His	Lys	Pro	Val	Val
145					150					155					160
Glu	Ile	Gln	Phe	Ala	Asp	Tyr	Ile	Trp	Pro	Gly	Ile	Asn	Gln	Leu	Phe
				165					170					175	
Ser	Glu	Ala	Ser	Ser	Ile	Tyr	Tyr	Arg	Ser	Ala	Gly	Glu	Trp	Glu	Val
			180					185					190		
Pro	Leu	Val	Ile	Arg	Ala	Pro	Ser	Gly	Gly	Tyr	Ile	Gln	Gly	Gly	Pro
		195				200						205			
Tyr	His	Ser	Gln	Ser	Ile	Glu	Gly	Phe	Leu	Ala	His	Cys	Pro	Gly	Ile
210					215						220				
Lys	Val	Ala	Tyr	Pro	Ser	Asn	Ala	Ala	Asp	Ala	Lys	Ala	Leu	Leu	Lys
225					230					235					240
Ala	Ala	Ile	Arg	Asp	Pro	Asn	Pro	Val	Val	Phe	Leu	Glu	His	Lys	Ala
				245					250					255	
Leu	Tyr	Gln	Arg	Arg	Ile	Phe	Ser	Ala	Cys	Pro	Val	Phe	Ser	His	Asp
			260					265					270		
Tyr	Val	Leu	Pro	Phe	Arg	Lys	Ala	Ile	Val	His	Pro	Gly	Lys	Asp	
		275					280					285			
Leu	Thr	Ile	Val	Ser	Trp	Gly	Met	Pro	Leu	Val	Leu	Ser	Leu	Glu	Val
290					295						300				
Ala	Gln	Glu	Leu	Ala	Ser	Arg	Gly	Ile	Ser	Ile	Glu	Val	Ile	Asp	Leu
305					310					315					320
Arg	Thr	Met	Val	Pro	Cys	Asp	Phe	Ala	Thr	Val	Leu	Lys	Ser	Leu	Glu
				325					330					335	
Lys	Thr	Gly	Arg	Leu	Leu	Val	Ile	His	Glu	Ala	Ser	Glu	Phe	Cys	Gly
			340					345					350		
Phe	Gly	Ser	Glu	Leu	Val	Ala	Thr	Met	Ser	Glu	Gln	Gly	Tyr	Ala	Tyr
		355					360					365			
Leu	Asp	Ala	Pro	Ile	Arg	Arg	Leu	Gly	Gly	Leu	His	Ala	Pro	Val	Pro
370					375						380				
Tyr	Ser	Lys	Val	Leu	Glu	Asn	Glu	Val	Leu	Pro	His	Lys	Glu	Ser	Ile
385					390					395					400
Leu	Gln	Ala	Ala	Lys	Ser	Leu	Ala	Glu	Phe						
				405					410						

<210>51

<211>429

<212>PRT

<213>Chlamydia pneumoniae

<400>51

Val	Asn	Phe	Leu	Leu	Pro	Thr	Thr	Cys	Arg	Gly	Ile	Leu	Met	Ala	Glu
1				5					10					15	
Ile	Ser	Thr	Pro	Ser	Leu	Pro	Asp	Ser	Ser	Ile	Val	Ser	Gln	Lys	Thr
			20					25					30		
Pro	Pro	Val	Pro	Asp	Pro	Asp	Ser	Ser	Pro	Asp	His	Ile	Pro	Thr	Ile
		35					40					45			
Pro	Thr	Gln	Ala	Pro	Phe	Lys	Pro	Gln	Arg	Lys	Lys	Glu	Thr	Pro	Ser
		50				55					60				
Ser	Ile	Val	Asn	Ala	Ile	Ala	Phe	Ala	Ile	Leu	Ala	Phe	Leu	Ser	Cys
65				70						75					80
Leu	Gly	Gly	Val	Phe	Ala	Ile	Cys	Leu	Gly	Cys	Ser	Leu	Glu	Ile	Thr
				85					90					95	
Met	Pro	Leu	Phe	Ile	Leu	Thr	Ala	Val	Phe	Ile	Ala	Phe	Thr	Leu	Leu

Ala Gly Gly Gln Xaa Thr Thr Glu Lys Leu Phe Val Phe Arg Arg
 145 150 155 160
 Pro Val Gly Lys Arg Ala His His Leu Xaa Cys Gln Ile Leu Ser Glu
 165 170 175
 Ser Arg Leu Glu Leu Lys Lys Val Tyr Glu Leu Glu Gly Thr Leu His
 180 185 190
 His Thr Ser Gln Ile Val Phe Lys Ser Asn Ala Cys Tyr Lys Glu Ile
 195 200 205
 Pro Arg Ser Arg Phe Tyr Ile Met Lys Glu Lys Cys Arg Glu Ser Ser
 210 215 220
 Cys His Phe Leu Asn His Arg Phe Pro Ser Ser Glu Val Gly Pro Phe
 225 230 235 240
 Ala Ser Ser Leu Leu Leu Gly Thr Pro Leu Pro Gln Asn Leu Arg Asp
 245 250 255
 Leu Phe Arg Gln Lys Gly Leu Ser His Leu Phe Ala Ile Ser Gly Trp
 260 265 270
 His Phe Ser Leu Cys Ala Thr Thr Leu Trp Met Leu Cys Ala Leu Leu
 275 280 285
 Pro Leu Lys Ile Lys Lys Ile Leu Ser Phe Ile Val Leu Thr Ser Leu
 290 295 300
 Ser Cys Ile Phe Pro Met Ser Leu Ser Val Trp Arg Ser Trp Ile Ser
 305 310 315 320
 Val Thr Leu Leu Cys Phe Ser Trp Cys Phe Ser Gly Ser Cys Ser Gly
 325 330 335
 Leu Asn Arg Leu Gly Ala Gly Phe Ile Leu Cys Ser Ile Phe Phe Ser
 340 345 350
 Arg Phe Ser Pro Thr Phe Val Leu Ser Phe Leu Ala Thr Leu Gly Ile
 355 360 365
 Leu Leu Phe Phe Pro Lys Ile Phe Ser Phe Leu Tyr Thr Pro Trp Thr
 370 375 380
 Gln Phe Leu Ser Pro Phe Trp Leu Tyr Pro Ile Arg Tyr Leu Ala Met
 385 390 395 400
 Thr Leu Ala Ile Ser Leu Ser Ala Gln Leu Phe Ile Val Leu Pro Ile
 405 410 415
 Met Gln Tyr Phe Gly Ser Leu Pro Leu Glu Gly Leu Leu Tyr Asn Leu
 420 425 430
 Ile Val Pro Phe Thr Ile Leu Pro Ile Ile Val Phe Leu Ile Ala Thr
 435 440 445
 Ile Ile Leu Pro Cys Cys Ser Pro Ile Thr Glu Ala Leu Ile Gln Gly
 450 455 460
 Phe Leu Ser His Pro Trp Leu His Asn Pro Asn Ile Leu Lys Thr Leu
 465 470 475 480
 Ser Phe Ala Pro Val Pro Pro Trp Met Leu Thr Leu Ala Ser Leu Ile
 485 490 495
 Leu Phe Phe Ile Gly Ile Leu Arg Thr Asn Val Ser Pro Tyr Ala Ser
 500 505 510
 Thr Ser Ala Thr Ser Tyr Arg Phe Ile Glu Thr Leu
 515 520

<210>53

<211>276

<212>PRT

<213>Chlamydia pneumoniae

<400>53

Ala Lys Ser Leu Trp Asp Ser Glu Arg Lys Lys Met Lys Lys Pro Asp
 1 5 10 15
 Asn Asp Ser Thr Phe Asp Val Arg Ser Phe Phe Pro Phe Asp Val Leu
 20 25 30
 Cys Ile Glu Gln Leu Arg Lys Glu Met Ser Trp Glu Val Val Ser Ala
 35 40 45
 Lys Ile Pro Arg Leu Pro Arg Gly Trp Tyr Glu Leu Met Gly Leu Ser
 50 55 60
 Lys Glu Asp Arg Ile Asp Phe Cys Leu Asp Phe Trp Cys Ser Val Leu
 65 70 75 80
 Gly Ile Glu His Lys Glu Ser Pro Ser Ile Cys Arg Phe Phe Ser Leu

85 90 95
 Leu Glu Thr Ile Glu Val Tyr Ile Tyr Arg Leu Glu Lys Glu Pro Tyr
 100 105 110
 Gln Leu Lys Met Phe Tyr Val Phe Arg Asp Gly Arg Cys Gly Phe Gln
 115 120 125
 Gly Glu Pro Pro Leu Leu Asp Phe Leu Gly His His Arg Leu Pro Pro
 130 135 140
 Leu Gly Asp Arg His Tyr Glu Lys Phe Phe Ser Ile His Asn Gly Phe
 145 150 155 160
 Gly Lys Trp Glu Asp Glu Gly Ile Phe Pro Met Arg Ser Leu Ala Lys
 165 170 175
 Val Gln Gln Lys Leu Arg Gln Gln Leu Val Val Met Asn Lys Met Gln
 180 185 190
 Ala Glu Asp Asn Cys Tyr Ser Leu Gly Ile Phe Pro Phe Tyr Gly Tyr
 195 200 205
 Glu Glu Pro Phe Ala Tyr Gln Ser Phe Phe Phe Asp Pro Glu Ile Arg
 210 215 220
 Arg Asp Leu Pro Ser Pro Asn Val Leu Leu Asn Glu Glu Ser Leu Glu
 225 230 235 240
 His Arg Ser Leu Glu Thr Ile Glu Leu Leu His Leu Ser Lys Ser Tyr
 245 250 255
 Tyr Pro Ser Phe Leu Ser Trp Leu Glu Asn Tyr Leu His Ser Glu Glu
 260 265 270
 Val Tyr Asn Glu
 275

<210>54

<211>113

<212>PRT

<213>Chlamydia pneumoniae

<400>54

Val Arg Arg Cys Ile Met Asn Glu Pro Thr Arg Thr Tyr Leu Glu Ser
 1 5 10 15
 Glu Lys Asp Thr Gln Asp Gln Ile Glu Glu Leu Gln Ala Thr Cys Ile
 20 25 30
 Val Lys Asn Ala Ala Gly Ile His Val Arg Pro Ala Gly Val Ile Val
 35 40 45
 Arg Leu Phe Asp Gly Glu Pro Cys Asp Val His Phe Thr Tyr Ala Gly
 50 55 60
 Lys Thr Ile Asn Ala Lys Ser Ile Met Ser Ile Leu Met Leu Gly Ala
 65 70 75 80
 Pro Gln Gly Gly Glu Ile Leu Val Thr Ile Arg Ser Lys Glu Ala His
 85 90 95
 Arg Ile Leu Gln Lys Ile Gln Asp Ala Phe Ser Ser Gly Phe Gly Glu
 100 105 110
 Leu

<210>55

<211>420

<212>PRT

<213>Chlamydia pneumoniae

<400>55

Met Asp Thr Gln Ser Ser Ile Gly Asn Glu Glu Trp Arg Ile Ala Gly
 1 5 10 15
 Thr Ser Val Val Ser Gly Met Ala Leu Gly Lys Val Phe Phe Leu Gly
 20 25 30
 Thr Ser Pro Leu His Val Arg Glu Leu Thr Leu Pro Gln Glu Glu Val
 35 40 45
 Glu His Glu Ile His Arg Tyr Tyr Lys Ala Leu Asn Arg Ser Lys Ser
 50 55 60
 Asp Ile Val Ala Leu Glu Gln Glu Val Thr Gly Gln Gln Gly Leu Gln
 65 70 75 80
 Glu Val Ser Ser Ile Leu Gln Ala His Leu Glu Ile Met Lys Asp Pro
 85 90 95
 Leu Leu Thr Glu Glu Val Val Asn Thr Ile Arg Lys Asp Arg Lys Asn

100 105 110
 Ala Glu Tyr Val Phe Ser Ser Val Met Gly Lys Ile Glu Glu Ser Leu
 115 120 125
 Thr Ala Val Arg Gly Met Pro Ser Val Val Asp Arg Val Gln Asp Ile
 130 135 140
 His Asp Ile Ser Asn Arg Val Ile Gly His Leu Cys Cys Gln His Lys
 145 150 155 160
 Ser Ser Leu Gly Glu Ser Asp Gln Asn Leu Ile Ile Phe Ser Glu Glu
 165 170 175
 Leu Thr Pro Ser Glu Val Ala Ser Ala Asn Ser Ala Tyr Ile Arg Gly
 180 185 190
 Phe Val Ser Leu Val Gly Ala Ala Thr Ser His Thr Ala Ile Val Ser
 195 200 205
 Arg Ala Lys Ser Ile Pro Tyr Leu Ala Asn Ile Ser Glu Glu Leu Trp
 210 215 220
 Asn Ile Ala Lys Arg Tyr Asn Gly Lys Leu Val Leu Ile Asp Gly Tyr
 225 230 235 240
 Arg Gly Glu Leu Ile Phe Asn Pro Lys Pro Ala Thr Leu Gln Ser Cys
 245 250 255
 Tyr Lys Lys Glu Leu Ser Val Val Ala His Thr Ser Gln Arg Leu Val
 260 265 270
 Arg Lys Ser Leu His Pro Ile Val Ser Ser His Ala Gly Ser Asp Lys
 275 280 285
 Asp Val Glu Asp Leu Leu Glu Asn Phe Pro Gln Thr Ser Ile Gly Leu
 290 295 300
 Phe Arg Ser Glu Phe Leu Ala Val Ile Leu Gly Arg Leu Pro Thr Leu
 305 310 315 320
 Arg Glu Gln Val Asp Leu Tyr Glu Lys Leu Ala Arg Phe Pro Gly Asp
 325 330 335
 Ser Pro Ser Val Leu Arg Leu Phe Asp Phe Gly Glu Asp Lys Pro Cys
 340 345 350
 Pro Gly Ile Lys Asn Lys Lys Glu Arg Ser Ile Arg Trp Leu Leu Asp
 355 360 365
 Tyr Ser Val Ile Leu Glu Asp Gln Leu Gln Ala Ile Ala Lys Ala Ser
 370 375 380
 Leu Gln Gly Ser Ile Lys Val Leu Ile Pro Gly Val Ser Asp Val Ser
 385 390 395 400
 Glu Ile Ile Glu Val Lys Lys Lys Trp Glu Thr Ile Gln Thr Arg Phe
 405 410 415
 Pro Lys Arg Pro
 420

<210>56

<211>102

<212>PRT

<213>Chlamydia pneumoniae

<400>56

Thr Ser Lys Cys Asn Phe Ala Pro Ser Ser Asp Pro His Asp Ser Pro
 1 5 10 15
 Cys Thr Ser Ser Cys Glu Gln Asn Gln Val Pro Val Ser Ile Cys Gly
 20 25 30
 Glu Ala Ala Gly Gln Leu Ser Leu Thr Pro Leu Phe Ile Gly Leu Gly
 35 40 45
 Val Gln Glu Leu Ser Val Ala Met Pro Val Ile Asn Arg Leu Arg Asn
 50 55 60
 His Ile Ala Leu Leu Glu Leu Asn Ser Cys Leu Glu Ile Thr Glu Ala
 65 70 75 80
 Leu Leu Gln Ala Lys Thr Cys Ser Glu Val Glu Glu Leu Leu Asn Arg
 85 90 95
 Asn Asn Lys Ile Thr Ser
 100

<210>57

<211>98

<212>PRT

<213>Chlamydia pneumoniae

<400>57

```

Ile Ser Met Gly Ser Gly Tyr Ala Lys Lys Lys Lys Glu Ala Lys Ile
 1          5          10          15
Met Glu Gln Gln Phe Leu Glu Met Glu Ala Ser Leu Leu Glu Lys Arg
          20          25          30
Tyr Glu Gly Gln Ala Gly Asn Gly Leu Val Ser Val Val Ile Asn Gly
          35          40          45
Lys Cys Asp Leu Ile Ser Val Lys Val Gln Pro Thr Cys Leu Asp Pro
          50          55          60
Glu Asp Pro Glu Val Ile Glu Asp Leu Phe Arg Ala Ala Phe Lys Leu
          65          70          75          80
Ala Lys Glu Gln Met Asp Gln Glu Met Ser Leu Met Arg Ser Thr Met
          85          90          95

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Pro Phe

<210>58

<211>271

<212>PRT

<213>Chlamydia pneumoniae

<400>58

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Val Val Val Lys Lys Cys Ile Phe Lys Gly Phe Leu Lys Lys Arg Ser
 1          5          10          15
Trp Arg Ser Tyr Arg Leu Trp Leu Lys Met Thr Ile Leu Arg Arg Arg
          20          25          30
Lys Lys His Trp Arg Arg Ser Pro Val Gln His Lys Glu Ala Cys Val
          35          40          45
Met Gln Asn Leu Phe Met Thr Tyr Val Ile Ser Leu Phe Pro Lys Ser
          50          55          60
Leu Ser Pro Asp Thr Val Ala Gln Ala Leu Gly Phe Ala Ser Gln Asp
          65          70          75          80
Ser Leu Arg Thr Leu Asp Asn Ala Ile Leu Gln Arg Asp Tyr Ala Thr
          85          90          95
Ala Leu Gly Ile Val Thr Asp Phe Leu Asn Ser Gly Val Ala Pro Val
          100          105          110
Thr Phe Leu His Asp Leu Thr Leu Phe Tyr Arg Asn Leu Leu Leu Thr
          115          120          125
Asn Ser Thr Thr Ser Lys Phe Ser Ser Gln Tyr Lys Thr Glu Gln Leu
          130          135          140
Leu Glu Ile Ile Asp Phe Leu Gly Glu Ser Ala Lys His Leu Gln Asn
          145          150          155          160
Thr Ile Phe Glu Gln Thr Phe Leu Glu Thr Val Ile Ile His Ile Ile
          165          170          175
Arg Ile Tyr Gln Arg Pro Val Leu Ser Glu Leu Ile Ser Ser Ile Lys
          180          185          190
Ser Arg Gln Phe Glu Gly Leu Arg Asn Ile Lys Glu Pro Thr Leu Thr
          195          200          205
Gln Gln Val Ser Ala Pro Gln Pro Gln Pro Thr Tyr Lys Glu Gln Ser
          210          215          220
Phe Leu Glu Lys Lys Asn Gln Pro Ala Ala Glu Gly Lys Ile Ile Ser
          225          230          235          240
Val Glu Val Lys Ser Ser Ala Ser Ile Lys Ser Ala Ala Val Asp Thr
          245          250          255
Leu Leu Gln Phe Ala Val Val Glu Phe Ser Gly Ile Leu Arg Gln
          260          265          270

```

<210>59

<211>233

<212>PRT

<213>Chlamydia pneumoniae

<400>59

```

Met Thr Leu Gln Pro Tyr Gln Ala Ser Ser Arg Lys Tyr Arg Pro Gln
 1          5          10          15
Ile Phe Arg Glu Ile Leu Gly Gln Ser Ser Val Val Ala Val Leu Lys
          20          25          30
Asn Ala Leu Val Phe Asn Arg Ala Ala His Ala Tyr Leu Phe Ser Gly

```

```

      35      40
Ile Arg Gly Thr Gly Lys Thr Thr Leu Ala Arg Ile Leu Ala Lys Ala
  50      55      60
Leu Asn Cys Val His Leu Ser Glu Asp Gly Glu Pro Cys Asn Gln Cys
  65      70      75      80
Phe Ser Cys Lys Glu Ile Ala Ser Gly Ser Ser Leu Asp Val Leu Glu
      85      90      95
Ile Asp Gly Ala Ser His Arg Gly Ile Glu Asp Ile Arg Gln Ile Asn
      100      105      110
Glu Thr Val Leu Phe Thr Pro Val Lys Ala Lys Phe Lys Ile Tyr Ile
      115      120      125
Ile Asp Glu Val His Met Leu Thr Lys Glu Ala Phe Asn Ala Leu Leu
      130      135      140
Lys Thr Leu Glu Glu Pro Pro Gln His Val Lys Phe Phe Phe Ala Thr
      145      150      155      160
Thr Glu Ile His Lys Ile Pro Gly Thr Ile Leu Ser Arg Cys Gln Lys
      165      170      175
Met His Leu Gln Arg Ile Pro Glu Lys Thr Ile Leu Glu Lys Leu Ser
      180      185      190
Leu Met Ala Gln Asp Asp His Ile Glu Ala Ser Gln Glu Ala Leu Ala
      195      200      205
Pro Ile Ala Arg Ala Ala Gln Gly Ser Leu Arg Asp Ala Glu Ser Leu
      210      215      220
Tyr Asp Leu Arg Asn Ile Phe Ile Ser
      225      230

```

<210>60

<211>346

<212>PRT

<213>Chlamydia pneumoniae

<400>60

```

Cys Lys Tyr Leu Tyr His His Ser Tyr Pro Pro Pro Gln His Ser Val
  1      5      10      15
Gly Ser Ile Ser Ser Arg Tyr Lys Leu Arg Val Leu Ala Ile Thr Phe
      20      25      30
Leu Val Leu Gly Val Leu Leu Leu Ile Ser Gly Ala Leu Phe Leu Thr
      35      40      45
Leu Gly Ile Pro Gly Leu Thr Ala Gly Val Ser Phe Gly Leu Gly Ile
      50      55      60
Gly Leu Ser Ala Leu Gly Gly Val Leu Val Val Ser Gly Leu Leu Cys
      65      70      75      80
Leu Leu Val Lys Arg Glu Val Ser Lys Val Cys Pro Glu Glu Ile Pro
      85      90      95
Ala Val Gln Pro Glu Glu Thr Pro Glu Gly Val Pro Val Thr Pro Phe
      100      105      110
Glu Lys Pro Ala Leu Asp Glu Ala Gln Lys Glu Gln Lys Thr Gln Lys
      115      120      125
Ile Leu Asp Gln Leu Pro Gln Glu Leu Asp Gln Leu Asp Arg Tyr Ile
      130      135      140
Gln Glu Val Phe Ala Cys Leu Gly Pro Leu Lys Asp Leu Lys Tyr Glu
      145      150      155      160
Asp Gln Gly Phe Leu Gln Asp Val Lys Glu Glu Phe Gln Val Phe Asp
      165      170      175
Phe Val Gln Lys Asp Met Ile Ala Glu Phe Val Glu Leu Gln Gln Ile
      180      185      190
Leu Cys Gln Glu Gly Arg Leu Leu Glu Phe Val Ile Asn Gln Thr Arg
      195      200      205
Tyr Ile Gly Arg Asp Leu Phe Lys Arg Glu Asp Ser Leu Tyr Lys Leu
      210      215      220
Trp Glu Trp Leu Gly Tyr Leu Pro Ser Gly Asp Val Arg Gly Glu Arg
      225      230      235      240
Leu Lys Lys Ser Ala Arg Glu Val Val Asp Arg Phe Met Arg Thr Thr
      245      250      255
Cys Asn Ile Arg Lys Ile Ala Met Thr Phe Asp Arg His Val Tyr Ser
      260      265      270

```

Val Ala Lys Thr Ala Phe Glu Lys Ala Phe Gly Ala Leu G hr Cys
 275 280 285
 Val Tyr Glu Ser Met Arg Glu Ser Tyr Arg Glu Ala Phe Cys Glu Tyr
 290 295 300
 Glu Lys Ala Lys Leu Leu Gly Asp Glu Glu Lys Ser Ala His Ala Glu
 305 310 315 320
 Gln Arg Phe Gln Asp Ile Lys Asn Arg Trp Glu Asp Val Lys Asp Ala
 325 330 335
 Phe Phe Trp Val Lys Glu Asp Gly Glu Asp
 340 345

<210>61

<211>145

<212>PRT

<213>Chlamydia pneumoniae

<400>61

Lys Lys Met Gly Lys Ile Glu Ile Asp Asp Ala Ile Gly Asn Ser Cys
 1 5 10 15
 Lys Trp Ser Glu Arg Tyr Glu Glu His Arg Ile Thr Arg Ala Arg Trp
 20 25 30
 Tyr Lys Val Ala Glu His Gln Leu Phe Asn Ala Thr Met Arg Val Lys
 35 40 45
 Asp Ser Leu Arg Glu His Asn Glu Ala Arg Val Ala Phe Glu Lys Glu
 50 55 60
 Arg Ser Lys Glu Asn Gln Arg Gln Val Gln Lys Lys Lys Glu Lys Arg
 65 70 75 80
 Leu Arg Asp Leu Lys Glu Leu His Asp Gln Glu Leu Pro Arg Ala Gln
 85 90 95
 Glu Arg Leu Arg Glu Leu Gln Ala Leu Tyr Pro Glu Ile Ala Val Ser
 100 105 110
 Val Val Glu Ala Arg Arg Glu Val Ala Ser Asp Leu Glu Lys Ala His
 115 120 125
 Glu Ser Ile Asp Lys His Tyr Gln Ser Cys Val Arg Glu Gln Glu Leu
 130 135 140

Tyr

145

<210>62

<211>279

<212>PRT

<213>Chlamydia pneumoniae

<400>62

Glu Glu Glu Glu Lys Gln Glu Ala Glu Phe Arg Glu Asn Gly Thr Lys
 1 5 10 15
 Ile Arg Ser Met Glu Glu Val Ser Glu Tyr Leu Gln Gln Val Glu Asn
 20 25 30
 Gln Leu Glu Ser Cys Ser Lys Arg Leu Thr Lys Met Glu Thr Phe Ala
 35 40 45
 Leu Gly Val Arg Leu Glu Ala Lys Glu Glu Ile Glu Ser Ile Ile Leu
 50 55 60
 Ser Asp Val Val Asn Arg Phe Glu Val Leu Cys Arg Asp Ile Glu Asp
 65 70 75 80
 Met Leu Ser Arg Val Glu Glu Ile Glu Arg Met Leu Arg Met Ala Glu
 85 90 95
 Leu Pro Val Leu Pro Ile Lys Glu Ala Leu Thr Lys Ala Phe Val Gln
 100 105 110
 His Asn Ser Cys Lys Glu Lys Leu Thr Lys Val Glu Pro Tyr Phe Lys
 115 120 125
 Glu Ser Pro Ala Tyr Leu Thr Ser Glu Asn Arg Leu Gln Ser Leu Asn
 130 135 140
 Gln Thr Leu Gln Arg Ala Tyr Lys Glu Ser Gln Lys Val Ser Gly Leu
 145 150 155 160
 Glu Ser Glu Val Arg Ala Cys Arg Glu Gln Leu Lys Asp Gln Val Arg
 165 170 175
 Gln Phe Glu Thr Gln Gly Val Ser Leu Ile Lys Glu Glu Ile Leu Phe
 180 185 190

Val Thr Ser Thr Arg Thr Lys Phe Ser Tyr His S Phe Arg Leu
 195 200 205
 His Val Pro Cys Met Arg Leu Tyr Glu Glu Tyr Tyr Asp Asp Ile Asp
 210 215 220
 Leu Glu Arg Thr Arg Ala Arg Trp Met Ala Met Ser Glu Arg Tyr Arg
 225 230 235 240
 Asp Ala Phe Gln Ala Phe Gln Glu Met Leu Lys Glu Gly Leu Val Glu
 245 250 255
 Glu Ala Gln Ala Leu Arg Glu Thr Glu Tyr Trp Leu Tyr Arg Glu Glu
 260 265 270
 Arg Lys Ser Lys Lys Lys His
 275

<210>63

<211>644

<212>PRT

<213>Chlamydia pneumoniae

<400>63

Cys Lys Tyr Leu Tyr His His Ser Tyr Pro Pro Pro Pro Pro Pro
 1 5 10 15
 Asp Gln Ser Val Gly Ala Ser Phe Cys Leu Ser Lys Phe Arg Val Leu
 20 25 30
 Ala Ile Thr Phe Leu Val Leu Gly Val Leu Leu Leu Ile Ser Gly Ala
 35 40 45
 Leu Phe Leu Thr Leu Gly Ile Ser Gly Val Ser Leu Gly Val Gly Leu
 50 55 60
 Gly Leu Ser Ala Leu Gly Ser Val Leu Val Ile Ser Gly Phe Leu Leu
 65 70 75 80
 Leu Leu Glu Arg Arg Glu Val Ser Gly Val Gly Leu Glu Gly Ile Pro
 85 90 95
 Thr Gly Ile Pro Val Gly Pro Ser Ala Glu Pro Ser Ser Glu Glu Ile
 100 105 110
 Gln Lys Lys Gln Lys Ala Lys Gln Ile Leu Asp Gln Leu Pro Gln Glu
 115 120 125
 Leu Asp Gln Leu Asp Thr Asp Ile Gln His Val Leu Ser Cys Leu Gly
 130 135 140
 Lys Leu Lys Asp Leu Lys Cys Lys Asp Arg Gly Leu Leu Lys Asp Ala
 145 150 155 160
 Lys Glu Lys Leu Gln Val Phe Asp Phe Val Trp Lys Asp Met Met Met
 165 170 175
 Glu Phe Val Glu Leu Gln Gln Val Met Asp Gln Glu Ser Arg Tyr Leu
 180 185 190
 Glu Gly Leu Ile His Glu Val Gln Ser Ile Ala His Lys Leu Phe Val
 195 200 205
 Asp Asp Val Asn Ile Arg Ser His Leu Gly Glu Ser Cys Gly Tyr Leu
 210 215 220
 Pro Ser Glu Asp Val Arg Gly Glu Leu Leu Lys Arg Phe Ala Lys Glu
 225 230 235 240
 Val Val Ala Arg Phe Met Lys Val Thr Arg Asp Ile Arg Lys Ile Ala
 245 250 255
 Met Ala Phe Asn Lys Asn Ala Tyr Gly Ala Ala Lys Asn Ala Phe Asp
 260 265 270
 Lys Ala Phe Gly Ser Leu Glu Thr Cys Leu Tyr Lys Ser Leu Thr Lys
 275 280 285
 Ser Tyr Arg Asp Thr Phe Cys Asp Tyr Lys Arg Ala Lys Ile Leu Pro
 290 295 300
 Asp Glu Asn Asn Ser Ala Arg Ala Glu Gln Arg Phe Arg Glu Val Lys
 305 310 315 320
 Asp His Trp Glu Asp Leu Asn Glu Thr Val Phe Trp Val Lys Glu Asp
 325 330 335
 Gly Arg Ile Asp Ile Glu Val Leu Thr Ala Val Gly Gly Trp Pro Asp
 340 345 350
 Arg Tyr Pro Glu His Leu Ile Leu Glu Lys Arg Lys Asp Lys Val Met
 355 360 365
 Ser His Gln Leu Trp Glu Ala Thr Met Arg Val Lys Glu Ala Glu Val

370 380
 Thr Tyr Ser Val Ala Arg Val Ala Phe Glu Lys Asp Gly Ser Gln Gln
 385 390 395 400
 Asn Gln Lys Lys Phe Gln Glu Lys Thr Lys Glu Arg Leu Arg Cys Leu
 405 410 415
 Lys Asp Leu Arg Asp Gln Glu Cys His Arg Ala Gln Glu Arg Leu Glu
 420 425 430
 Lys Leu Thr Ala Leu Tyr Pro Glu Val Ser Val Ser Val Val Glu Thr
 435 440 445
 Glu Arg Glu Arg Lys Phe Asn Leu Glu Lys Ala Tyr Gly Asn Leu Glu
 450 455 460
 Glu Arg Tyr Gln Ser Val Val Gln Asp Gln Glu Asp Tyr Trp Thr Glu
 465 470 475 480
 Gln Lys Asn Arg Glu Ala Glu Phe Arg Ala Lys Gly Thr Lys Val Arg
 485 490 495
 Ser Met Glu Glu Val Ala Glu His Leu Gln Ile Leu Glu Asn Leu Leu
 500 505 510
 Glu Asp Cys Tyr Lys Arg Leu Ser Lys Ala Glu Thr Phe Ala Leu Gly
 515 520 525
 Val Glu Arg Glu Ala Thr Glu Glu Ile Glu Tyr Thr Ile Leu Ser Asp
 530 535 540
 Ala Ala Asn Arg Leu Lys Val Leu Cys Glu Asp Ile Glu Asp Thr Leu
 545 550 555 560
 Pro Arg Val Glu Glu Ile Glu Met Met Leu Arg Met Ala Glu Arg Pro
 565 570 575
 Leu His Pro Ile Lys Gln Ala Phe Thr Lys Ala Phe Val Gln Tyr Asn
 580 585 590
 Arg Cys Lys Glu Arg Leu Ala Lys Val Glu Pro Tyr Tyr Lys Glu Ser
 595 600 605
 Pro Ala Tyr Val Asn Ser Glu Glu Arg Leu Gln Ser Leu Asp Gln Ala
 610 615 620
 Ser Gln Cys Ile Gln Arg Val Pro Lys Gly Phe Lys Phe Arg Asn Gly
 625 630 635 640
 Ser Met Tyr Ile

<210>64

<211>114

<212>PRT

<213>Chlamydia pneumoniae

<400>64

Ser Lys Ile Cys Phe Ala Phe Cys Phe Phe Cys Ile Ser Ser Glu Glu
 1 5 10 15
 Gly Ser Ala Glu Gly Pro Thr Gly Ile Pro Val Gly Ile Pro Ser Lys
 20 25 30
 Pro Thr Pro Glu Thr Ser Arg Leu Ser Lys Ser Asn Arg Asn Pro Glu
 35 40 45
 Ile Thr Ser Thr Leu Pro Asn Ala Glu Ser Pro Lys Pro Thr Pro Arg
 50 55 60
 Glu Thr Pro Glu Ile Pro Asn Val Arg Lys Arg Ala Pro Glu Ile Ser
 65 70 75 80
 Lys Ser Thr Pro Arg Thr Lys Lys Val Ile Ala Lys Thr Arg Asn Leu
 85 90 95
 Asp Arg Gln Lys Glu Ala Pro Thr Asp Trp Ser Gly Gly Gly Gly Gly
 100 105 110
 Gly Gly

<210>65

<211>167

<212>PRT

<213>Chlamydia pneumoniae

<400>65

Ile Ala Lys Ser Asp Cys Arg Val Trp Ile Arg Leu His Ser Ala Tyr
 1 5 10 15
 Lys Glu Ser Gln Lys Val Ser Ser Leu Glu Thr Glu Ala Cys Thr Tyr

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<210>66
<211>235
<212>PRT
<213>Chlamydia pneumoniae
<400>66
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<210>67
<211>526
<212>PRT
<213>Chlamydia pneumoniae
<400>67
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368

35 40 45
 Glu Trp Leu Gln Asp Lys Asn Lys Ser Ala Arg Ala Glu Gln Arg Phe
 50 55 60
 Arg Glu Val Lys Asp Arg Trp Glu Asp Leu Lys Glu Thr Val Phe Trp
 65 70 75 80
 Val Lys Glu Asn Gly Cys Ile Asp Leu Glu Val Leu Thr Ala Val Gly
 85 90 95
 Gly Trp Pro Asp Arg Gly Pro Glu His Leu Ile Pro Glu Lys Arg Arg
 100 105 110
 Asn Lys Val Met Ser His Lys Leu Trp Glu Ala Thr Met Arg Met Lys
 115 120 125
 Gly Ala Glu Gly Thr Tyr Ser Val Ala Arg Val Ala Phe Glu Lys Asp
 130 135 140
 Gly Ser Arg Lys Asn Gln Lys Lys Phe Gln Glu Lys Thr Lys Glu Trp
 145 150 155 160
 Leu Arg Cys Leu Lys Asp Leu His Asp Gln Glu Cys His Arg Ala Arg
 165 170 175
 Glu Arg Leu Ala Glu Leu Glu Ala Leu Tyr Pro Glu Val Ser Val Ser
 180 185 190
 Val Val Glu Thr Glu Arg Glu Thr Lys Phe Lys Leu Glu Thr Ala Tyr
 195 200 205
 Gly Asn Leu Glu Glu Arg Tyr Gln Ser Val Val Arg Asp Gln Glu Asp
 210 215 220
 Tyr Trp Lys Glu Glu Glu Asn Lys Glu Ala Glu Phe Arg Glu Lys Gly
 225 230 235 240
 Thr Lys Val Arg Ser Pro Glu Glu Val Val Glu Tyr Leu Gln Ile Leu
 245 250 255
 Glu Asn Leu Leu Glu Asp Cys Ser Lys Gln Leu Thr Ile Ala Glu Val
 260 265 270
 Val Val Leu Gly Val Glu Leu Glu Ala Thr Ala Glu Phe Glu Tyr Thr
 275 280 285
 Ile Leu Ser Asp Ala Ala Asn Arg Leu Lys Val Leu Cys Glu Asp Ile
 290 295 300
 Glu Asp Ile Leu Pro Arg Val Glu Glu Ile Glu Ile Met Leu Arg Ile
 305 310 315 320
 Ala Glu Leu Pro Phe Leu Pro Ile Lys Gln Ala Phe Thr Lys Ala Phe
 325 330 335
 Leu Gln Tyr Asn Ser Cys Lys Asp Lys Leu Ala Lys Val Glu Pro Tyr
 340 345 350
 Cys Gln Glu Ser Val Asp Tyr Arg Arg Asn Lys Glu Arg Phe Gln Ser
 355 360 365
 Leu Asn Gln Asp Leu Gln Asn Val Tyr Gln Glu Cys Gln Lys Ala Thr
 370 375 380
 Gly Leu Glu Ser Glu Val Ser Ala Tyr Arg Asp His Leu Arg Glu Gln
 385 390 395 400
 Ile Thr Glu Phe Glu Thr Gln Gly Leu Asp Val Ile Lys Glu Glu Leu
 405 410 415
 Leu Phe Val Ser Ser Thr Leu Lys Ser Lys Leu Ser Tyr Asp Pro Leu
 420 425 430
 Ile Ala Asp Ile Pro Cys Met Lys Phe Tyr Glu Glu Tyr Tyr Asp Gly
 435 440 445
 Ile Asp Lys Ala Arg Val Gln Ser Arg Trp Leu Glu Lys Ser Glu Arg
 450 455 460
 Tyr Arg Lys Ala Lys Lys Gly Phe Gln Glu Met Leu Lys Glu Gly Leu
 465 470 475 480
 Phe Lys Glu Asp Gln Ala Leu Lys Lys Ala Glu Tyr Arg Leu Leu Arg
 485 490 495
 Glu Lys Arg Met Asn Lys Glu Lys Leu Leu Ile Cys Asn Lys Ile Glu
 500 505 510
 Ala Ala Gln Gln Arg Val Gln Glu Phe Gly Pro Ser Asp Ser
 515 520 525

<210>68

<211>705

<212>PRT

<213>Chlamydia pneumoniae

<400>68

Met Lys Glu Leu Arg His Glu Ser Tyr Asn Arg Ala Leu His Lys Leu
 1 5 10 15
 Ser His Gln Trp Val Arg Tyr Phe Leu Tyr Thr Phe Val Ser Cys Ser
 20 25 30
 Phe Ile Val Ala Ile Phe Thr Phe Ala Trp Leu Lys Val Leu Tyr Val
 35 40 45
 Pro Glu Xaa Lys Ala Gly Glu Ile Ser Arg Ile Ser Leu Thr Ala Pro
 50 55 60
 Met Asp Phe Xaa Leu Ser Trp Ser Ala His Lys Phe Tyr Lys Arg Thr
 65 70 75 80
 Ala His Ile Ser Glu Ala Phe Gly Lys Val Tyr His Leu Thr Leu Ser
 85 90 95
 Pro Gly Ser Leu Leu Ser Lys Glu Gly Asn Ala Asp Glu Asn Thr Asp
 100 105 110
 Tyr Trp Phe Lys Lys Ala Ala Asp Phe Leu Leu Ser Thr Asn Phe Val
 115 120 125
 Asp Ser Ser Thr Gln Lys Cys Leu Lys Asp Leu Cys Ile Tyr Pro Pro
 130 135 140
 Leu Leu Gly Lys Glu Lys Lys Thr Leu Glu Ile Asn Ile Asn Ser Asn
 145 150 155 160
 Lys Gly Asn Val Ile Ala Gln Cys Phe Cys His Leu Lys Ile Phe Leu
 165 170 175
 Ile Gln Glu Asn Cys Pro Gln Pro Cys Phe Asp Ala Ile Met Asp Ile
 180 185 190
 Leu Lys Ile Ala Asn Phe Glu Val Ala Val Asp Lys Glu Met Ser Gly
 195 200 205
 Cys Val Lys Gly Glu Leu Leu Gly Lys Arg Cys Ile Glu Lys Ile Thr
 210 215 220
 Lys Gly Thr Pro Ile Leu Glu Lys Tyr Gln Arg Ile Asp Asp Arg Asp
 225 230 235 240
 Ala Lys Ile Leu Lys Gln Leu Arg Ala Gln Leu Leu Ser Val His Thr
 245 250 255
 Leu Phe Ser Cys Arg Ser Leu Trp Gly Ala Ile Phe Val Val Leu Leu
 260 265 270
 Ile Leu Leu Trp Gly Tyr Gly Ala Leu Lys Ala Leu Cys Pro Glu Met
 275 280 285
 Leu Lys Ser Pro Gln Arg Phe Met Leu Tyr Ile Ala Ile Leu Thr Leu
 290 295 300
 Ser Leu Leu Trp Cys Arg Gly Thr Glu Ile Phe Cys Ala Tyr Trp Val
 305 310 315 320
 Ser Tyr Leu Ser Tyr Pro Pro Ile Leu Pro Phe Thr Ala Val Leu Leu
 325 330 335
 Gly Tyr Phe Leu Gly Leu Pro Ile Ala Gly Phe Ser Cys Thr Phe Leu
 340 345 350
 Ala Leu Leu Tyr Thr Leu Gly Ser Asp Leu Trp Asn Asn Ser Trp Phe
 355 360 365
 Leu Ser Ile Asn Leu Leu Cys Ser Trp Arg Ile Leu Val Ser Leu His
 370 375 380
 Arg Val Ser Arg Leu Ser Ser Val Phe Trp Ala Cys Met Lys Leu Gly
 385 390 395 400
 Gly Val Ala Met Gly Ser Leu Leu Met Phe Arg Ile Phe Thr Asn Thr
 405 410 415
 Ile Ser Arg Glu Ala Leu Tyr Ala Asp Gly Ile Glu Ser Phe Val Tyr
 420 425 430
 Ser Leu Ile Thr Ala Ile Ser Val Val Ala Leu Ile Pro Val Phe Glu
 435 440 445
 Ala Ser Phe Gly Ala Ser Thr Asn Phe Ser Leu Leu Thr Tyr Leu Ser
 450 455 460
 Pro Glu Asn Ala Leu Leu Lys Arg Leu Phe Lys Glu Ala Pro Gly Thr
 465 470 475 480
 Tyr Gln His Ser Val Leu Val Gly Ser Leu Ala Glu Ala Ala Ala Gln
 485 490 495

Ala Ile Gly Ala Asp Ser Leu Tyr Cys Leu Val Ala Ala His Tyr His
 500 505 510
 Asp Ile Gly Lys Leu Ile Asn Pro Gly Phe Phe Ser Glu Asn Gln Lys
 515 520 525
 Ile Leu Gln Gln Ser Gly His Ser Leu Ser Pro Leu Glu Cys Ala Lys
 530 535 540
 Met Ile Met Arg His Ile Pro Glu Gly Val Asn Leu Ala Arg Gln Xaa
 545 550 555 560
 Gly Leu Pro Glu Ser Asp Ile Gln Val Ile Glu Glu His His Gly Thr
 565 570 575
 Ser Val Ile Arg Ser Ala Tyr Tyr Ser His Met Val Glu Asn Pro Ser
 580 585 590
 Thr Gly Ser Phe Asp Glu Glu Leu Phe Arg Tyr Ser Gly Asn Lys Pro
 595 600 605
 Ser Ser Lys Glu Thr Thr Ile Met Ile Ala Asp Ser Phe Glu Ala
 610 615 620
 Ala Ser Arg Ser Leu Lys Asn Ala Ser Leu Pro Asp Leu Gln Arg Leu
 625 630 635 640
 Ile Asp Gln Ile Ile Gln Gly Lys Leu Gln Asp Gly Gln Phe Ser Cys
 645 650 655
 Ser Pro Ile Thr Leu Asp Glu Leu Ala Leu Ile Ser Lys Ser Met Val
 660 665 670
 Gln Thr Leu Tyr Gly Ala Leu His Ser Arg Met Lys Tyr Pro Glu Ile
 675 680 685
 Ser Tyr Gln Ile Ser Met Asp Ser Cys Pro Lys Pro Ser Ile Gly Gly
 690 695 700

Thr

705

<210>69

<211>224

<212>PRT

<213>Chlamydia pneumoniae

<400>69

Val Ile Ser Cys Gln Gly Lys Arg Pro Leu Arg Tyr Cys Phe Leu Glu
 1 5 10 15
 Ile Gln Ile Leu Ala Lys Ala Gln Val His Glu Cys Ile Ser Phe Xaa
 20 25 30
 Arg Ser Trp Tyr Pro Lys Leu Trp Phe Gln Leu Ser Thr Thr Glu Thr
 35 40 45
 Thr Gly Asp Arg Glu Lys Lys Ile Pro Leu His Leu Val Glu Asn Ser
 50 55 60
 Tyr Phe Phe Thr Asp Gly Val Asp Ala Leu Val His Lys Gly Val Cys
 65 70 75 80
 Asp Leu Ala Ile His Ser Ala Lys Asp Leu Pro Glu Thr Pro Ser Leu
 85 90 95
 Pro Val Val Ala Ile Thr Arg Cys Leu His Pro Ala Asp Leu Leu Val
 100 105 110
 Tyr Ala Asp His Tyr Val His Glu Pro Leu Pro Leu Ser Pro Arg Leu
 115 120 125
 Gly Ser Ser Ser Leu Arg Arg Ser Ala Val Leu Lys Gln Leu Phe Pro
 130 135 140
 Gln Gly Gln Ile Leu Asp Ile Arg Gly Thr Ile Glu Glu Arg Leu Asp
 145 150 155 160
 Gln Leu His Arg Gly His Tyr Asp Ala Ile Val Leu Ala Lys Ala Ala
 165 170 175
 Ser Leu Arg Leu His Leu His His Ala Tyr Ser Ile Glu Leu Pro Pro
 180 185 190
 Pro Tyr His Ala Leu Gln Gly Ser Leu Ala Ile Thr Ala Lys Asp His
 195 200 205
 Ala Gly Lys Trp Lys Gln Leu Phe Thr Pro Ile His Cys His Ser Ser
 210 215 220

<210>70

<211>334

<212>PRT

<213>Chlamydia p oniae

<400>70

Arg Ile Cys Asn Ala Asp Val Phe Glu Ser Glu Ala Leu Asn Ile Ser
 1 5 10 15
 Ser Pro Leu Ile Tyr Leu Phe Pro Glu Thr Asn Leu Asp Asn Ile Lys
 20 25 30
 Gln Gln Ile Ala Thr Leu Glu Pro Asp Ile Leu Ile Ile Asp Ser Ile
 35 40 45
 Gln Ile Ile Phe Asn Pro Thr Leu Asn Ser Ala Pro Gly Ser Val Ala
 50 55 60
 Gln Val Arg Glu Val Thr Tyr Glu Leu Met Gln Ile Ala Lys Ser Ala
 65 70 75 80
 Gln Ile Thr Thr Phe Ile Ile Gly His Val Thr Lys Ser Gly Glu Ile
 85 90 95
 Ala Gly Pro Arg Val Leu Glu His Leu Val Asp Thr Val Leu Tyr Phe
 100 105 110
 Glu Gly Asn Ser His Ala Asn Tyr Arg Met Ile Arg Ser Val Lys Asn
 115 120 125
 Arg Phe Gly Pro Thr Asn Glu Leu Leu Ile Leu Ser Met His Ala Asp
 130 135 140
 Gly Leu Lys Glu Val Ser Asn Pro Ser Gly Leu Phe Leu Gln Glu Lys
 145 150 155 160
 Thr Gly Pro Thr Thr Gly Ser Met Ile Ile Pro Ile Ile Glu Gly Ser
 165 170 175
 Gly Ala Leu Leu Ile Glu Leu Gln Ala Leu Val Ser Ser Ser Pro Phe
 180 185 190
 Ala Asn Pro Val Arg Lys Thr Ala Gly Phe Asp Pro Asn Arg Phe Ser
 195 200 205
 Leu Leu Leu Ala Val Leu Glu Lys Arg Ala Gln Val Lys Leu Phe Thr
 210 215 220
 Met Asp Val Phe Leu Ser Ile Thr Gly Gly Leu Lys Ile Ile Glu Pro
 225 230 235 240
 Ala Ala Asp Leu Gly Ala Leu Leu Ala Val Ala Ser Ser Leu Tyr Asn
 245 250 255
 Arg Leu Leu Pro Asn Asn Ser Ile Val Ile Gly Glu Val Gly Leu Gly
 260 265 270
 Gly Glu Ile Arg His Val Ala His Leu Glu Arg Arg Ile Lys Glu Gly
 275 280 285
 Lys Leu Met Gly Phe Glu Gly Ala Ile Leu Pro Glu Gly Gln Ile Ser
 290 295 300
 Ser Leu Pro Lys Glu Ile Arg Glu Asn Phe Arg Leu Gln Gly Val Lys
 305 310 315 320
 Thr Ile Lys Arg Cys Tyr Pro Ser Val Thr Leu Thr Pro Val
 325 330

<210>71

<211>97

<212>PRT

<213>Chlamydia pneumoniae

<400>71

Glu Thr Tyr Val Pro Leu Leu Pro Pro Arg Glu Glu Ile Leu Pro Leu
 1 5 10 15
 Met Ser Gly Asn Pro Lys Asn Leu Leu Gln Gln Phe Thr Gln Lys Gln
 20 25 30
 Phe Arg Val Leu Pro Val Tyr Gln Ser Thr Ala Val Thr Asp Ala Gln
 35 40 45
 Gly Asn Val Ser Tyr Gln Ile Gln Val Leu Val Asn Gln Glu Val Trp
 50 55 60
 Gly Glu Gly Asn Ala Ser Ser Lys Lys Glu Ala Glu Lys Ile Ala Ala
 65 70 75 80
 Gln Gln Ala Leu Asp Thr Tyr Gly Asn Lys Asn Gln Asn Thr Met Asp
 85 90 95
 Val

<210>72

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>72

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Ile Pro Asn Ser Lys Phe Lys Asp Gly Ala Leu Leu Ser Met His Pro
 1           5           10           15
Pro Ile Asp Ile Thr Ala Ile Glu Ala Lys Leu Asn Phe Thr Phe Thr
          20           25           30
Gln Pro Lys Leu Leu Glu Ile Ala Leu Thr His Pro Ser Tyr Lys Asn
          35           40           45
Glu Ser Ala Val Gln Ile Glu Asp Ser Glu Arg Leu Glu Phe Leu Gly
          50           55           60
Asp Ala Val Leu Gly Leu Ile Val Thr Glu His Leu Phe Leu Leu Phe
          65           70           75           80
Pro Ser Met Asp Glu Gly Thr Leu Ser Thr Ala Arg Ala Ser Leu Val
          85           90           95
Asn Ala Lys Ala Cys Cys Arg Tyr Thr Thr Met Leu Gly Ile Gly Asp
          100          105          110
Tyr Leu Leu Ile Gly Lys Gly Glu Lys Ile Gln Ser Glu Arg Gly Arg
          115          120          125
Leu Ser Ala Tyr Ala Asn Leu Phe Glu Ser Ile Leu Gly Ala Val Tyr
          130          135          140
Leu Asp Gly Gly Leu Ser Pro Ala Arg Lys Leu Thr Phe Pro Ser Phe
          145          150          155          160
Leu Leu Glu Lys Lys Phe Phe Leu
          165

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<210>73

<211>165

<212>PRT

<213>Chlamydia pneumoniae

<400>73

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Cys Phe Trp Ile Cys Tyr Leu Ile Arg Ile Arg Met Arg Ser Ala Leu
 1           5           10           15
His Leu Gln His Leu Arg His Phe His Asn His Gly Ser Ile Leu Phe
          20           25           30
Glu Asn Leu Leu Thr Ile Lys Asp Cys Phe Leu Leu Glu Thr Lys Leu
          35           40           45
Gln Asn Phe Ile Ala Lys Ala Ser Lys Thr Ile Asp Thr Val Arg Trp
          50           55           60
Arg Glu Asn Ile Phe Arg Ser Met Pro Glu Ile Tyr Thr Val Val Arg
          65           70           75           80
Lys Arg Arg Leu Asp Phe Phe Ala Ala Glu Leu Val His Arg Pro Lys
          85           90           95
Leu Ser Leu Val Arg Asp Leu Trp Val Phe Pro Gly Glu Glu Ile Leu
          100          105          110
Glu Gly Glu Glu Asp Cys Met Leu Phe Leu Leu Leu Ser Gly Asp Arg
          115          120          125
Ala Gly Ser Gly Ile Phe Phe Thr Gly Pro Tyr Pro Ser Asp Leu Tyr
          130          135          140
Glu Leu Glu Lys Gly Thr Thr Gly Leu Leu Leu Ala Phe Ser Ser Val
          145          150          155          160
Gly Ile Pro Val Ile
          165

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<210>74

<211>595

<212>PRT

<213>Chlamydia pneumoniae

<400>74

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Glu Phe Leu Lys Leu Ser Leu His Arg Ile Ser Leu Met Lys Glu Val
 1           5           10           15
Glu Gln Arg Ile Arg Ser Leu Tyr Asp Ala Val Thr Ala Glu Asn Ile
          20           25           30
Cys Arg Trp Leu Ser Asn Asp Cys Thr Gln Gln Asp Ala Lys Thr Ile
          35           40           45

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Leu	Gly	Trp	Leu	Ala	Thr	Asp	Pro	Ala	Gln	Leu	Glu	Asp	Leu	Phe	Gly
50						55					60				
Ala	Thr	Leu	Thr	Phe	Gly	Thr	Gly	Gly	Leu	Arg	Ser	Leu	Met	Gly	Ile
65					70					75					80
Gly	Thr	Asn	Arg	Ile	Asn	Leu	Phe	Thr	Ile	Arg	Arg	Thr	Thr	Gln	Gly
				85					90					95	
Leu	Val	Gln	Val	Leu	Arg	Ala	His	Leu	Pro	His	Pro	Gly	Asp	Pro	Met
			100					105					110		
Arg	Val	Val	Val	Gly	Cys	Asp	Thr	Arg	His	Asn	Ser	Ile	Glu	Phe	Ala
			115				120					125			
Gln	Glu	Thr	Ala	Lys	Val	Leu	Ala	Gly	Asn	Gly	Cys	Glu	Val	Phe	Leu
130						135					140				
Phe	Gln	Tyr	Pro	Glu	Pro	Leu	Ala	Leu	Val	Ser	Phe	Thr	Val	Arg	Tyr
145					150					155					160
Glu	Arg	Ala	Ile	Gly	Gly	Val	Met	Ile	Thr	Ala	Ser	His	Asn	Pro	Pro
				165					170					175	
Asn	Tyr	Asn	Gly	Tyr	Lys	Val	Tyr	Met	Ala	Ser	Gly	Gly	Gln	Val	Leu
			180					185					190		
Pro	Pro	Leu	Asp	Gln	Glu	Ile	Val	Ala	Ala	Cys	Ser	Ala	Val	Asn	Glu
			195				200					205			
Ile	Leu	Ser	Val	Pro	Ser	Ile	Asp	His	Pro	Asn	Ile	His	Leu	Ile	Gly
210						215					220				
Lys	Glu	Tyr	Glu	Ala	Leu	Tyr	Arg	Asp	Thr	Leu	Lys	Gln	Leu	Gln	Leu
225					230					235					240
Tyr	Pro	Glu	Ala	Asn	Arg	Ile	Ser	Gly	Arg	Ser	Leu	Ser	Ile	Ser	Tyr
				245					250					255	
Ser	Pro	Leu	His	Gly	Thr	Gly	Ile	Ser	Leu	Val	Pro	His	Val	Leu	Lys
			260					265					270		
Asp	Trp	Gly	Phe	Leu	Ser	Val	His	Leu	Val	Glu	Lys	Gln	Ala	Ile	Gly
		275					280					285			
Asp	Gly	Asp	Phe	Pro	Thr	Val	Gln	Leu	Pro	Asn	Pro	Glu	Asp	Pro	Glu
290						295					300				
Ala	Leu	Thr	Leu	Gly	Thr	Glu	Gln	Met	Leu	Ala	Asn	Asp	Asp	Asp	Leu
305					310					315					320
Phe	Ile	Ala	Thr	Asp	Pro	Asp	Ala	Asp	Arg	Val	Gly	Val	Val	Cys	Leu
				325					330					335	
Glu	Asp	Gly	Gln	Pro	Tyr	Arg	Phe	Asn	Gly	Asn	Gln	Met	Ala	Ser	Leu
			340					345					350		
Leu	Ala	Asp	His	Ile	Leu	Gly	Ala	Trp	Ser	Lys	Thr	Arg	His	Leu	Gly
		355					360					365			
Glu	His	Asp	Lys	Leu	Val	Lys	Ser	Leu	Val	Thr	Thr	Glu	Met	Leu	Ser
370						375					380				
Ala	Ile	Ala	Lys	His	Tyr	His	Val	Asp	Leu	Ile	Asn	Val	Gly	Thr	Gly
385					390					395					400
Phe	Lys	Tyr	Ile	Gly	Glu	Lys	Ile	Glu	Ser	Trp	Arg	Asn	Ser	Thr	Asn
				405					410					415	
Lys	Phe	Val	Phe	Gly	Ala	Glu	Glu	Ser	Tyr	Gly	Cys	Leu	Tyr	Gly	Thr
			420					425					430		
His	Val	Glu	Asp	Lys	Asp	Ala	Ile	Ala	Ser	Ala	Leu	Ile	Ala	Glu	
		435					440				445				
Ala	Ala	Leu	Gln	Gln	Lys	Leu	Gln	Gly	Lys	Thr	Leu	Cys	Asp	Ala	Leu
450						455					460				
Leu	Ser	Leu	Tyr	Glu	Thr	Tyr	Gly	Tyr	Phe	Ala	Asn	Lys	Thr	Glu	Ser
465					470					475					480
Val	Val	Phe	Ser	Ala	Lys	Thr	Asp	Glu	Gln	Glu	Ile	Arg	Lys	Lys	Leu
				485					490					495	
Ser	His	Leu	Glu	Ile	Ser	Ser	Ala	Asn	Phe	Phe	Ser	Gly	Lys	Tyr	
			500				505					510			
Gln	Val	Glu	Lys	Phe	Glu	Asn	Tyr	Lys	Gln	Gly	Ile	Gly	Phe	Asn	Leu
			515				520					525			
Leu	Ser	Lys	Asp	Ser	Tyr	Ala	Leu	Thr	Leu	Pro	Lys	Thr	Ser	Met	Leu
530						535					540				
Cys	Tyr	Tyr	Phe	Ser	Gly	Gly	Gly	Arg	Val	Ile	Ile	Arg	Pro	Ser	Gly
545					550					555					560

Thr Glu Pro Lys Ile Lys Phe Tyr Phe Glu Met Ser Thr His Tyr Pro
 565 570 575
 Glu Arg Val Thr Asp Lys Glu Ile Gln Lys His Val Lys Gln Arg Val
 580 585 590
 Phe Asn Ile
 595

<210>75

<211>214

<212>PRT

<213>Chlamydia pneumoniae

<400>75

Ile Leu Lys Arg Tyr Val Val Met Ser Phe Val Pro Tyr Ser Leu Pro
 1 5 10 15
 Glu Leu Pro Tyr Asp Tyr Asp Ala Leu Glu Pro Val Ile Ser Ser Glu
 20 25 30
 Ile Met Ile Leu His His Gln Lys His His Gln Ile Tyr Ile Asn Asn
 35 40 45
 Leu Asn Ala Ala Leu Lys Arg Leu Asp Ala Ala Glu Thr Gln Gln Asn
 50 55 60
 Leu Asn Glu Leu Ile Ala Leu Glu Pro Ala Leu Arg Phe Asn Gly Gly
 65 70 75 80
 Gly His Ile Asn His Ser Leu Phe Trp Glu Thr Leu Ala Pro Ile Asp
 85 90 95
 Gln Gly Gly Gly Gln Pro Pro Asn His Glu Leu Leu Ser Leu Ile Glu
 100 105 110
 Arg Phe Trp Gly Thr Met Asp Asn Phe Leu Lys Lys Leu Ile Glu Val
 115 120 125
 Ala Ala Gly Val Gln Gly Ser Gly Trp Ala Trp Leu Gly Phe Cys Pro
 130 135 140
 Ala Lys Gln Glu Leu Val Leu Gln Ala Thr Ala Asn Gln Asp Pro Leu
 145 150 155 160
 Glu Pro Leu Thr Gly Lys Leu Pro Leu Leu Gly Val Asp Val Trp Glu
 165 170 175
 His Ala Tyr Tyr Leu Gln Tyr Lys Asn Val Arg Met Asp Tyr Leu Lys
 180 185 190
 Ala Phe Pro Gln Ile Ile Asn Trp Gly His Ile Glu Asn Arg Phe Ser
 195 200 205
 Glu Ile Ile Ser Ser Lys
 210

<210>76

<211>255

<212>PRT

<213>Chlamydia pneumoniae

<400>76

Ile Arg Trp Leu Val Arg Leu Phe Ser Tyr Asp Lys Pro Lys Ile Lys
 1 5 10 15
 Val Gln Lys Ile Lys Ala Asp Gly Phe Ser Gly Trp Leu Lys Cys Asn
 20 25 30
 His Cys His Glu Met Ile His Ala Asn Glu Leu Gly Gln Asn Tyr Asn
 35 40 45
 Cys Cys Pro Lys Cys Ser Tyr His Tyr Arg Ile Thr Ala Ile Glu Arg
 50 55 60
 Val Lys Leu Leu Ala Asp Lys Asp Ser Trp Arg Pro Leu Tyr Thr Asp
 65 70 75 80
 Leu Lys Ser Gln Asp Pro Leu Glu Phe Ile Asp Thr Asp Thr Tyr Ala
 85 90 95
 Asn Arg Leu Glu Lys Ala Arg Lys Asn Thr Thr Glu Ser Glu Gly Val
 100 105 110
 Ile Val Gly Ile Cys Thr Ile Gly Leu His Pro Val Ala Leu Ala Val
 115 120 125
 Met Asp Phe Asn Phe Met Ala Gly Ser Met Gly Ala Val Val Gly Xaa
 130 135 140
 Lys Leu Thr Arg Leu Ile Glu Glu Ala Ile Glu Thr Arg Leu Pro Val
 145 150 155 160


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Ile Ile Val Ser      Ser Gly Gly Ala Arg Met Gln G Ser Val Phe
      165      170
Ser Leu Met Gln Met Val Lys Thr Ser Ala Ala Leu Ala Lys Leu His
      180      185      190
Glu Ala Gly Leu Pro Tyr Ile Ser Val Leu Thr Asn Pro Thr Ser Gly
      195      200      205
Gly Val Thr Ala Ser Phe Ala Ala Leu Gly Asp Ile Ile Ile Ala Glu
      210      215      220
Pro Lys Ala Leu Ile Cys Phe Ala Gly Pro Arg Val Val Ala Gln Val
      225      230      235      240
Ile Gly Glu Asp Leu Pro Glu Gly Phe Lys Asn Leu Asn Ser Tyr
      245      250      255

```

<210>77

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>77

```

Ile Cys Asn Ala Ile Leu Met Thr Val Phe Cys Glu Leu Asp Ser Gly
  1      5      10      15
Gly Glu Leu Pro Glu Tyr Thr Thr Pro Gly Ala Ala Gly Ala Asp Leu
      20      25      30
Arg Ala Asn Ile Glu Glu Pro Ile Ala Leu Leu Pro Gly Gln Arg Ala
      35      40      45
Leu Ile Pro Thr Gly Ile Lys Ala Glu Ile Pro Glu Val Arg Ala Thr
      50      55      60
Gly Pro Ser Ser Glu Arg Phe Gly Phe Lys Ala Arg His Tyr Cys Phe
      65      70      75      80
Lys Phe Pro Arg Asp Tyr Arg Phe Arg Leu
      85      90

```

<210>78

<211>101

<212>PRT

<213>Chlamydia pneumoniae

<400>78

```

Ser Leu Pro Glu Ser Lys Gln Lys Phe Pro Lys Tyr Glu Leu Gln Val
  1      5      10      15
Arg Pro Arg Ser Gly Leu Ala Leu Lys His Gly Ile Thr Val Leu Asn
      20      25      30
Ser Pro Gly Thr Ile Asp Ser Asp Tyr Arg Gly Glu Ile Arg Val Ile
      35      40      45
Leu Ile Asn Phe Gly Asp Ser Thr Phe Ile Ile Glu Pro Lys Met Arg
      50      55      60
Ile Ala Gln Val Val Leu Ser Pro Val Val Gln Ala Thr Phe Val Val
      65      70      75      80
Lys Gln Xaa Ser Leu Ala Glu Thr Ala Arg Gly Ser Gly Gly Phe Gly
      85      90      95
His Thr Gly Ala Ser
      100

```

<210>79

<211>169

<212>PRT

<213>Chlamydia pneumoniae

<400>79

```

Val Glu Val Leu Val Ile Leu Glu Gln Ala Lys Met Pro Ser Tyr Cys
  1      5      10      15
Gln Asn Gln Gln Asp Phe Ser Leu Phe Ser Leu Leu Ser Pro Arg Leu
      20      25      30
Val Met Phe Leu Gly Lys His Ser Arg Asp Glu Ile Leu Gln Asp Leu
      35      40      45
Thr Asp Leu Val Asp Ala Ala Gly Leu Leu Glu Asp Lys Gln Ala Phe
      50      55      60
Phe Asp Ala Leu Val Arg Arg Glu Asn Ile Met Ser Thr Gly Ile Gly
      65      70      75      80
Met Gly Val Ala Ile Pro His Gly Lys Leu Glu Ser Cys Ser Asn Phe

```

85 90 95
 Phe Ile Ala Ile Gly Ile His Thr Gln Gly Ile Leu Trp Asp Ala Ile
 100 105 110
 Asp Gly Ala Leu Val Arg Leu Val Phe Leu Ile Gly Gly Pro Glu Asn
 115 120 125
 Ala Gln Ala Glu Tyr Leu Lys Leu Leu Ser Thr Leu Thr Leu Ser Leu
 130 135 140
 Arg Glu Glu Ser Arg Arg Gln Gln Leu Leu Gln Val Asn Thr Ile Glu
 145 150 155 160
 Glu Val Met Asn Val Phe Val Gly Met
 165

<210>80

<211>225

<212>PRT

<213>Chlamydia pneumoniae

<400>80

Met Asp Leu Lys Leu Asp Glu Val Ala Ser Leu Leu Asp Val Ser Glu
 1 5 10 15
 His Thr Val Leu Gln Trp Leu Lys Glu Gly Ala Ile Pro Ser Tyr Ser
 20 25 30
 Met Asn Asn Glu Tyr Arg Phe Ser Arg Glu Glu Ile Glu Asp Trp Leu
 35 40 45
 Leu His Asn Gln Ala Leu Met Ile Gln Glu Arg Gly Glu Asp Lys Glu
 50 55 60
 Ala Leu Lys Asp Leu Ser Leu Lys Tyr Ser Leu Tyr Lys Ala Ile His
 65 70 75 80
 Arg Gly Gly Val Leu Cys Asp Val Val Val His Ser Lys Glu Glu Ala
 85 90 95
 Leu Gln Tyr Ala Ser Lys Tyr Ile Ala Gln Lys Phe Gln Leu Asp Glu
 100 105 110
 Ser Val Leu Phe Glu Met Leu Ser His Arg Glu Asn Leu Met Ser Thr
 115 120 125
 Gly Ile Gly Glu Gly Ile Ala Leu Pro His Ala Lys Asp Phe Leu Ile
 130 135 140
 Asn Ala Tyr Tyr Asp Ile Val Val Pro Met Phe Leu Ala Glu Pro Ile
 145 150 155 160
 Glu Tyr Gly Ala Leu Asp Gly Lys Pro Val Gly Ile Leu Phe Phe Leu
 165 170 175
 Phe Ala Cys Gln Asp Lys Ser His Leu Asn Leu Val Asn Lys Ile Val
 180 185 190
 His Leu Gly Met Ser Leu Asn Ala Arg Ser Phe Phe Lys Asn Tyr Pro
 195 200 205
 Asn Lys Asp Gln Leu Leu Ala Tyr Val Lys Glu Trp Glu Ser Gln Thr
 210 215 220

His

225

<210>81

<211>480

<212>PRT

<213>Chlamydia pneumoniae

<400>81

Lys Lys Ser Phe Cys Cys Tyr Gly Asp Pro His Arg Leu Pro Gly Asp
 1 5 10 15
 Cys Ser Arg Met Met Ser Ser Lys Arg Thr Ser Lys Ile Ala Val Leu
 20 25 30
 Ser Ile Leu Leu Thr Phe Thr His Ser Ile Gly Phe Ala Asn Ala Asn
 35 40 45
 Ser Ser Val Gly Leu Gly Thr Val Tyr Ile Thr Ser Glu Val Val Lys
 50 55 60
 Lys Pro Gln Lys Gly Ser Glu Arg Lys Gln Ala Lys Lys Glu Pro Arg
 65 70 75 80
 Ala Arg Lys Gly Tyr Leu Val Pro Ser Ser Arg Thr Leu Ser Ala Arg
 85 90 95
 Ala Gln Lys Met Lys Asn Ser Ser Arg Lys Glu Ser Ser Gly Gly Cys

100	105	110
Asn Glu Ile Ser Ala Asn Ser Thr Pro Arg Ser Val Lys Leu Arg Arg		
115	120	125
Asn Lys Arg Ala Glu Gln Lys Ala Ala Lys Gln Gly Phe Ser Ala Phe		
130	135	140
Ser Asn Leu Thr Leu Lys Ser Leu Leu Pro Lys Leu Pro Ser Lys Gln		
145	150	155
Lys Thr Ser Ile His Glu Arg Glu Lys Ala Thr Ser Arg Phe Val Asn		
165	170	175
Glu Ser Gln Leu Ser Ser Ala Arg Lys Arg Tyr Cys Thr Pro Ser Ser		
180	185	190
Ala Ala Pro Ser Leu Phe Leu Glu Thr Glu Ile Val Arg Ala Pro Val		
195	200	205
Glu Arg Thr Lys Glu Leu Gln Asp Asn Glu Ile His Ile Pro Val Val		
210	215	220
Gln Val Gln Thr Asn Pro Lys Glu Gln Asn Thr Lys Thr Thr Lys Gln		
225	230	235
Leu Ala Ser Gln Ala Ser Ile Gln Gln Ser Glu Gly Thr Glu Gln Ser		
245	250	255
Leu Arg Glu Leu Ala Gln Gly Ala Ser Leu Pro Val Leu Val Arg Ser		
260	265	270
Asn Pro Glu Val Ser Val Gln Arg Gln Lys Glu Glu Leu Lys Glu		
275	280	285
Leu Val Ala Glu Arg Arg Gln Cys Lys Arg Lys Ser Val Arg Gln Ala		
290	295	300
Leu Glu Ala Arg Ser Leu Thr Lys Lys Val Ala Arg Gly Gly Ser Val		
305	310	315
Thr Ser Thr Leu Arg Tyr Asp Pro Glu Lys Ala Ala Glu Ile Lys Ser		
325	330	335
Arg Arg Asn Cys Lys Val Ser Pro Glu Ala Arg Glu Gln Lys Tyr Ser		
340	345	350
Ser Cys Lys Arg Asp Ala Arg Ala Asn Gly Lys Gln Asp Lys Thr Thr		
355	360	365
Pro Ser Glu Asp Ala Ser Gln Glu Glu Gln Gln Thr Gly Ala Gly Leu		
370	375	380
Val Arg Lys Thr Pro Lys Ser Gln Val Ala Ser Asn Ala Gln Asn Phe		
385	390	395
Tyr Arg Asn Ser Lys Asn Thr Asn Ile Asp Ser Tyr Leu Thr Ala Asn		
405	410	415
Gln Tyr Ser Cys Ser Ser Glu Glu Thr Asp Trp Pro Cys Ser Ser Cys		
420	425	430
Val Ser Lys Arg Arg Thr His Asn Ser Ile Ser Val Cys Thr Met Val		
435	440	445
Val Thr Val Ile Ala Met Ile Val Gly Ala Leu Ile Ile Ala Asn Ala		
450	455	460
Thr Glu Ser Gln Thr Thr Ser Asp Pro Thr Pro Pro Thr Pro Thr Pro		
465	470	475
		480

<210>82

<211>590

<212>PRT

<213>Chlamydia pneumoniae

<400>82

Tyr Asp Tyr Tyr Lys Tyr Asn Met Phe Phe Lys Lys Asn Tyr Met Thr		
1	5	10
Asp Phe Pro Thr His Phe Lys Gly Pro Lys Leu Asn Pro Ile Lys Val		
20	25	30
Asn Pro Asn Phe Phe Glu Arg Asn Pro Lys Val Ala Arg Val Leu Gln		
35	40	45
Ile Thr Ala Val Val Leu Gly Ile Ile Ala Leu Leu Ser Gly Ile Val		
50	55	60
Leu Ile Ile Gly Thr Pro Leu Gly Ala Pro Ile Ser Met Ile Leu Gly		
65	70	75
Gly Cys Leu Leu Ala Ser Gly Gly Ala Leu Phe Val Gly Gly Thr Ile		
85	90	95

Ala	Thr	Ile	Leu	Gln	Asn	Arg	Asn	Ser	Tyr	Lys	Lys	Ala	Val	Asn	Gln
			100					105						110	
Lys	Lys	Leu	Ser	Glu	Pro	Leu	Met	Glu	Arg	Pro	Glu	Leu	Lys	Ala	Leu
		115					120					125			
Asp	Tyr	Ser	Leu	Asp	Leu	Lys	Glu	Val	Trp	Asp	Leu	His	His	Ser	Cys
	130					135					140				
Cys	Gln	His	Leu	Lys	Lys	Ile	Asp	Leu	Asn	Leu	Ser	Glu	Thr	Gln	Arg
	145				150					155					160
Glu	Val	Leu	Asn	Gln	Ile	Lys	Ile	Asp	Asp	Glu	Gly	Pro	Ser	Leu	Gly
			165					170						175	
Glu	Cys	Ala	Ala	Met	Ile	Ser	Glu	Asn	Tyr	Asp	Ala	Cys	Leu	Lys	Met
			180					185					190		
Leu	Ala	Tyr	Arg	Glu	Glu	Leu	Leu	Lys	Glu	Gln	Thr	Gln	Tyr	Gln	Glu
		195					200					205			
Thr	Arg	Phe	Asn	Gln	Asn	Leu	Thr	His	Arg	Asn	Lys	Val	Leu	Leu	Ser
	210					215					220				
Ile	Leu	Ser	Arg	Ile	Thr	Asp	Asn	Ile	Ser	Lys	Ala	Gly	Gly	Val	Phe
	225				230					235					240
Ser	Leu	Lys	Phe	Ser	Thr	Leu	Ser	Ser	Arg	Met	Ser	Arg	Ile	His	Thr
			245						250				255		
Thr	Thr	Thr	Val	Ile	Leu	Ala	Leu	Ser	Ala	Val	Val	Ser	Val	Met	Val
			260					265					270		
Val	Ala	Ala	Leu	Ile	Pro	Gly	Gly	Ile	Leu	Ala	Leu	Pro	Ile	Leu	Leu
		275					280					285			
Ala	Val	Ala	Ile	Ser	Ala	Gly	Val	Ile	Val	Thr	Gly	Leu	Ser	Tyr	Leu
	290					295					300				
Val	Arg	Gln	Ile	Leu	Ser	Asn	Thr	Lys	Arg	Asn	Arg	Gln	Asp	Phe	Tyr
	305				310					315					320
Lys	Asp	Phe	Val	Lys	Asn	Val	Asp	Ile	Glu	Leu	Leu	Asn	Gln	Thr	Val
			325						330				335		
Thr	Leu	Gln	Arg	Phe	Leu	Phe	Glu	Met	Leu	Lys	Gly	Val	Leu	Lys	Glu
		340					345						350		
Glu	Glu	Glu	Val	Ser	Leu	Glu	Gly	Gln	Asp	Trp	Tyr	Thr	Gln	Tyr	Ile
		355					360					365			
Thr	Asn	Ala	Pro	Ile	Glu	Lys	Arg	Leu	Ile	Glu	Glu	Ile	Arg	Val	Thr
	370					375						380			
Tyr	Lys	Glu	Ile	Asp	Ala	Gln	Thr	Lys	Lys	Met	Lys	Thr	Asp	Leu	Glu
	385				390					395					400
Phe	Leu	Glu	Asn	Glu	Val	Arg	Ser	Gly	Arg	Leu	Ser	Val	Ala	Ser	Pro
			405						410					415	
Ser	Glu	Asp	Pro	Ser	Glu	Thr	Pro	Ile	Phe	Thr	Gln	Gly	Lys	Glu	Phe
		420						425				430			
Ala	Lys	Leu	Arg	Arg	Gln	Thr	Ser	Gln	Asn	Ile	Ser	Thr	Ile	Tyr	Gly
		435					440					445			
Pro	Asp	Asn	Glu	Asn	Ile	Asp	Pro	Glu	Phe	Ser	Leu	Pro	Trp	Met	Pro
	450					455					460				
Lys	Lys	Glu	Glu	Glu	Ile	Asp	His	Ser	Leu	Glu	Pro	Val	Thr	Lys	Leu
	465				470					475					480
Glu	Pro	Gly	Ser	Arg	Glu	Glu	Leu	Leu	Leu	Val	Glu	Gly	Val	Asn	Pro
			485						490					495	
Thr	Leu	Arg	Glu	Leu	Asn	Met	Arg	Ile	Ala	Leu	Leu	Gln	Gln	Gln	Leu
		500						505					510		
Ser	Ser	Val	Arg	Lys	Trp	Arg	His	Pro	Arg	Gly	Glu	His	Tyr	Gly	Asn
		515					520					525			
Val	Ile	Tyr	Ser	Asp	Thr	Glu	Leu	Asp	Arg	Ile	Gln	Met	Leu	Glu	Gly
	530					535					540				
Ala	Phe	Tyr	Asn	His	Leu	Arg	Glu	Ala	Gln	Glu	Glu	Ile	Thr	Gln	Ser
	545				550					555					560
Leu	Gly	Asp	Leu	Val	Asp	Ile	Gln	Asn	Arg	Ile	Leu	Gly	Ile	Ile	Val
			565					570						575	
Glu	Gly	Asp	Ser	Asp	Ser	Arg	Thr	Glu	Glu	Glu	Pro	Gln	Glu		
			580					585					590		

<210>83

<211>580

<212>PRT

<213>Chlamydia pneumoniae

<400>83

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Gly Val Tyr Met Ala Asn Pro Thr Gln Ser Arg Pro Pro Ser Pro Glu
 1      5      10      15
Ile Ser Ile Glu Glu Leu Glu Leu Gln Glu Leu Ala Gly Ser Ser Asn
      20      25      30
Thr Glu Thr Ile Ser Asn Thr Pro Pro Pro Ser Cys Ala Ala Thr Ala
      35      40      45
Glu Glu Val Ser Leu Phe Ile Glu Gly Gly Arg Arg Asn Ser Glu Asp
      50      55      60
Glu Glu Gly Pro Leu Gly Ser Cys Glu Val Tyr Asp Val Val Cys Ile
      65      70      75      80
Thr Asn Gln Gly Asp Pro Glu Val Arg Asp His Glu Val Arg Val Met
      85      90      95
Tyr Ile Asn Gly Ser Gly Arg Thr Gln His Glu Gly Ile Leu Asp Ala
      100      105      110
Met Asn Ile Cys Asp Leu Arg Gly Glu Pro Val Arg Phe Ile His Asn
      115      120      125
Ser Gly Tyr Gly Leu Gly Ser Cys Phe Leu Gly Ile Arg Asn Arg Ile
      130      135      140
Pro Pro Arg Asp Asn Val Ile Ser Gln Ala Ile Gln Ala Arg Trp Asn
      145      150      155      160
Glu Phe Phe Ile Phe Ala Glu Asn Ala Asn Arg Asp Tyr Ile Val Leu
      165      170      175
Phe Ser Gly Asn Gly Gly Leu Tyr Leu Gln Val Ala Leu Asp Asn Ser
      180      185      190
Ile Tyr Ser His His Ile Leu Cys Val Gly Ile Gly Ser Ser Tyr Tyr
      195      200      205
Ile Gln Gly Asn Tyr Arg Val His Asn Tyr Arg Val Thr Gly Asp Trp
      210      215      220
Thr Thr Leu Leu Asp Arg Arg Gly Ala Thr Ala Val Asn Thr Thr Thr
      225      230      235      240
Leu Pro Tyr Ala Asp Ser Ala Glu Gly Leu Phe Leu Pro Ser Val Arg
      245      250      255
Cys Pro Ser Tyr Gln Trp Ala Leu Arg Cys Gly Glu Gln Cys Leu Ile
      260      265      270
Met Asp Asn Asn Gln Gln Val Gly Phe Arg Pro Gln Asp Ser Ser Ser
      275      280      285
Glu Ile Ala Leu Val Val Asn Leu Asn Gln Asp His Ser Thr Trp Thr
      290      295      300
Arg Leu Ile Glu Trp Ile Asp Arg Gly Asp Ser Gln Ala Val Leu Glu
      305      310      315      320
Leu Asn Pro Gln Pro Ser His Cys Arg Asp Ile Ala Leu Thr Ala Leu
      325      330      335
Tyr Ala Thr Thr Arg Ile Ser Ser Leu Leu Gln Glu Cys Leu Met Ile
      340      345      350
Ser Val Thr Tyr Ala Pro Glu Val Phe Val Thr Tyr Ala Ile Val Thr
      355      360      365
Gly Tyr Ser Ile Met Thr Leu Arg Tyr Phe Ile Leu Leu Leu Thr Asn
      370      375      380
Arg Pro Gly Cys Arg Arg His Phe Arg Val Leu Arg Leu Ala Ala Leu
      385      390      395      400
Gly Leu Gln Ser Leu Gly Phe Leu Thr Val Leu Leu Asp His Ile Asn
      405      410      415
Val Thr Arg Arg Val Asn Arg Arg Pro Pro Leu Ile Ser Val Ile Phe
      420      425      430
Cys Thr Ala Ser Phe Ala Thr Gly Ser Phe Ile Tyr Val Asp Leu Thr
      435      440      445
Arg Met Phe Phe Thr Ser Leu Arg Ser Arg Leu Gln Leu Phe Val Gln
      450      455      460
Arg Arg Leu Thr Gly Arg Gly Leu Pro Leu Arg Arg Val Phe Val Asn
      465      470      475      480
His Leu Asp Ser Leu Arg Phe Ser Gln Asn Ala Leu Ile Thr Phe His

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485 490 495
 Gly Gly Leu Phe Met Pro Leu Ile Ile Gly Phe Phe Asn Gln Leu Val
 500 505 510
 Ile Gln Val Pro Arg Val Val Ile Arg Pro Asn Thr Thr Ala Val Tyr
 515 520 525
 Asp Leu Asn Gln Thr Ser Gln Glu Ala Trp Asp Ser Gly Asp Val Leu
 530 535 540
 Ala Ile Gly Gln Thr Ile Asn Phe Leu Leu Cys Met Ile Leu Leu Val
 545 550 555 560
 Ile Asn Thr Phe Phe Phe Val Arg Ser Val Arg Arg Asn Leu His Arg
 565 570 575
 Arg Pro His Arg
 580

<210>84

<211>264

<212>PRT

<213>Chlamydia pneumoniae

<400>84

Lys Gly Ser Gly Tyr Ser Tyr Arg Gly Pro Pro Met Ala Val Glu Gly
 1 5 10 15
 Arg Val Asn Ser Gln Ala Leu Asn Gln Asp Cys Gln Glu Val Leu
 20 25 30
 Ala Asn Lys Gln Ser Lys Gly Leu Leu Arg Cys Arg Ile Leu Ser Ile
 35 40 45
 Val Val Ala Val Ile Thr Phe Ile Ala Gly Val Val Leu Ile Ala Leu
 50 55 60
 Thr Leu Ala Ser Ile Leu Thr Ser Val Pro Tyr Leu Ala Leu Gly Val
 65 70 75 80
 Phe Leu Leu Ile Val Thr Leu Gly Cys Ile Ile Phe Ala Leu Cys Ser
 85 90 95
 Glu Lys Ile Lys Lys Val Pro Pro Thr Pro Ile Ser His Lys Glu Glu
 100 105 110
 Ile Ile Ala Trp Phe Glu Glu Arg Lys Asn Ile Asp Met Glu Lys Glu
 115 120 125
 Lys Glu Asp Pro Glu His Phe Gly Arg Thr Ala Thr Asp Ile Pro Met
 130 135 140
 Arg Ser Ala Leu Asp Gln Phe Asn His Ser Cys His His Ile His Glu
 145 150 155 160
 Ser Pro Ala Leu Thr Glu Thr Tyr Arg Ser His Gln Asp Val Leu Leu
 165 170 175
 Phe Lys Asp Trp Cys Pro Val Thr Leu Pro Asp Val Thr Ser Glu Glu
 180 185 190
 Glu Val Leu Ile Arg Ser Val Val Gly Ser Tyr Leu Leu Met Glu Ala
 195 200 205
 Cys Val Pro Lys Val Ser Met Leu Ile Asp Glu Leu His Asn Lys Leu
 210 215 220
 Xaa Ser Pro Ser Glu Arg Glu Cys Leu Phe Ile Asp Lys Lys Thr Leu
 225 230 235 240
 Gln Arg Lys Ala Ser Phe Leu Phe Thr Gln Lys Asp Leu Ala Thr Phe
 245 250 255
 Phe Leu Asp Leu Tyr Ala Gly Glu
 260

<210>85

<211>193

<212>PRT

<213>Chlamydia pneumoniae

<400>85

Ser Phe Met Ile Lys Lys Phe Phe Ile Tyr Ser Leu Ile Phe Ser Cys
 1 5 10 15
 Ser Phe Ser Ala Pro Leu Lys Gly Ile Cys Asn Glu Asp Val Ser Ser
 20 25 30
 Gln Ser Arg Ile Glu Glu Asp Pro Glu Val Leu Ile Thr Gln Leu Asn
 35 40 45
 Glu Leu Ile Glu Thr Pro Ile Glu Glu Gly Lys Glu Ile Arg Asn Glu

50 55 60
 Leu Gln Ala Ile Ser Asp Gly Gln Lys Ser Ser Glu Glu Ile Glu Glu
 65 70 75 80
 Ser Cys Gly Thr Ser Asp Ser Glu Gly Leu Ser Glu Lys Thr Asp Lys
 85 90 95
 Glu Ser Ser Asn Glu Tyr Val Leu Asp Phe Phe Asp Ser Met Val Gln
 100 105 110
 Arg Leu Glu Gly Ile Ser Lys Met Cys Gln Ser Gly Gln Val Ala Gln
 115 120 125
 Ile Ile Asp Cys Phe Asn Arg Glu Phe Asp Ile Arg Asn Arg Glu Leu
 130 135 140
 Glu Leu Lys Asn Arg Glu Leu Glu Leu Arg Glu Lys Asp Leu Glu Phe
 145 150 155 160
 Lys Lys Ser Ile Leu Asp Trp Asn Lys Glu Lys Val Ser Arg Glu Leu
 165 170 175
 Ala Phe Gln Arg Glu Gln Asp Ile Lys Gln Thr Leu Met Leu Leu Lys
 180 185 190
 Lys

<210>86

<211>297

<212>PRT

<213>Chlamydia pneumoniae

<400>86

Asn Phe Lys Ile Trp Gly Ile Arg Ile Thr Ile Ala Val Glu Leu Pro
 1 5 10 15
 Pro Pro Glu Val Gly Gly Glu Leu Pro Pro Tyr Phe Ser Ala Ser Asn
 20 25 30
 Phe Val Val Ile Glu Arg Gly Ala Pro Ser Leu Pro Ser Pro Gln Gln
 35 40 45
 Leu Leu Ser Leu Pro Glu Tyr Ser Arg Gln Pro Pro Pro Gly Tyr Phe
 50 55 60
 Asp Glu Thr Ala Ser Ile Thr Ser Arg Thr Ser Glu Glu Met Phe Gly
 65 70 75 80
 Thr Leu Val Ser Thr Leu Cys Cys Pro Ala Asn Ser Glu Arg Asp Trp
 85 90 95
 Glu Asp His Glu Val Asn Cys Ile Tyr Ile Ala Ser Thr Ser Asp Thr
 100 105 110
 Gln Leu Glu Ala Val Gln Gly Gly Met His Ile Thr Glu Leu Arg Gly
 115 120 125
 Glu Pro Val Arg Val Leu Tyr Glu Thr Gly His Leu Tyr Ala Phe Ala
 130 135 140
 Arg Glu Asn Thr Cys His Ser Arg Leu Glu Val Ser His Thr Val Arg
 145 150 155 160
 Ala Met Thr Tyr Phe Trp Asp Arg Phe Phe Ser Arg His Trp Asn Val
 165 170 175
 Gly Arg Arg Phe Leu Val Phe Tyr Gln Gly Asn Gly Gly Ala Tyr Val
 180 185 190
 Gln Ala Ala Leu Asp Ser Ser Met His Thr Gln Asp Ile Tyr Val Leu
 195 200 205
 Gly Leu Ser Pro Thr Val Tyr Ile Arg Gly Asn Tyr His Val Gln His
 210 215 220
 Tyr Arg Val Arg Gly Phe Trp Pro Ser Cys Leu Asp Ser Leu Ala Ala
 225 230 235 240
 Cys Ala Glu Asn Thr Ser Val Leu Pro Thr Gly Asn Arg Val Thr Glu
 245 250 255
 Ser Phe Thr Pro Leu Tyr Ser Ala Thr His Leu Ile Thr Arg Tyr Gly
 260 265 270
 Met Val Arg Asp Ala Cys Trp Phe Val Leu Arg Ala Trp Glu Cys Phe
 275 280 285
 Gln Lys Arg Asn Asn Lys His Leu Leu
 290 295

<210>87

<211>380

<212>PRT

<213>Chlamydia pneumoniae

<400>87

Arg Glu Leu Ser Arg Thr Ala Leu Pro Cys Ser Arg Ile Leu Ala Leu
 1 5 10 15
 Leu Pro Gly Phe Ser Ser Gly Leu Cys Gly Lys Tyr Ile Ser Thr Ser
 20 25 30
 Tyr Gly Glu Ser Ser Asp Gly Ile Phe Tyr Pro Ser Leu Phe Ser His
 35 40 45
 Thr Phe Asp Asn Ala Ile Arg Tyr Gly Glu Arg Cys Leu Leu Val Cys
 50 55 60
 Ser Glu Gly Met Gly Met Leu Pro Glu Thr Gln Gln Thr Ser Pro
 65 70 75 80
 Leu Thr Ser Leu Glu Gly Gly His Glu Val Ala Leu Val Leu Asn Pro
 85 90 95
 Gln Gln Asn Pro Glu Ala Leu Ser Ile Ala Ser Arg Leu Met His Glu
 100 105 110
 Glu Arg Gly Gly Arg Leu Glu Ser Asn Tyr Met Pro Gly Arg Ser Ser
 115 120 125
 Asn Pro Phe Met Thr Ser Met Tyr Val Leu Val Arg Leu Asn Thr Leu
 130 135 140
 Ala Gln Ile Tyr Leu Met Ser Pro Tyr Tyr Ser Phe Gln Ser Asn Asp
 145 150 155 160
 Ile Val Cys Leu Ile Phe Ile Ser Ser Ala Ala Val Glu Thr Val Ser
 165 170 175
 Tyr Ile Phe Leu Thr Val Thr Asp Ser Thr Cys Gly Arg Arg Tyr Leu
 180 185 190
 Arg Val Pro Arg Leu Val Cys Thr Gly Leu Arg Asn Leu Ala Leu Pro
 195 200 205
 Thr Thr Leu Leu Glu Leu Leu Ile Leu Ser Tyr Pro Arg Ser Val Glu
 210 215 220
 Gly Val Pro Phe Asn Val Arg Phe Ile Leu Gly Tyr Met Cys Thr Thr
 225 230 235 240
 Arg Val Val Phe Phe Ala Trp Asn Leu Ile Leu His Trp Pro Phe Arg
 245 250 255
 Cys Leu Arg His Gly Ile Gln Leu Phe Val His Arg Ser Ile Ile Gly
 260 265 270
 His Thr Leu Gly Ala Arg Ile Thr Asp Leu Thr Leu Ala Ser Met Arg
 275 280 285
 Tyr Ala Ile Val Phe Pro Ser Ile Val Ser Ser Cys Leu Leu Thr Ala
 290 295 300
 Leu Ala His Ala Asn Thr Asn Ile Leu Ala Leu Asp Pro Tyr Arg Leu
 305 310 315 320
 Ile Glu Ser Gly Asp Leu Arg Arg Pro Ala Phe Asn Asp Asp Glu Met
 325 330 335
 Gln Gln Ala Asp Asn Pro Trp Asp Ala Tyr Ser Ile Gly Leu Val Ile
 340 345 350
 Asn Thr Cys Ile Tyr Met Leu Ile Leu Phe Ala Asn Leu Ile Phe Met
 355 360 365
 Val Tyr Ser Val Arg Arg Tyr His Arg Ser Arg Arg
 370 375 380

<210>88

<211>156

<212>PRT

<213>Chlamydia pneumoniae

<400>88

Ile Lys Ser Leu Arg Ser Ile Leu Glu Phe Ile Cys Pro Leu Gln His
 1 5 10 15
 Ala Arg Cys Leu Lys Lys Gln His Lys Ile Ile Glu Glu Leu Phe Pro
 20 25 30
 Glu Pro Phe Gln Lys Asp His Leu Tyr Leu Lys Leu Met Glu Asn Ser
 35 40 45
 Ser Ser Arg Asp Ala Phe Asp Lys Lys Arg Met Leu Lys Glu Asn Leu
 50 55 60

Val Val Gly Cys Ser Asp Leu Tyr Leu Tyr Glu Val Tyr Gln Asp
 65 70 75 80
 Gly Ile Leu Phe Phe Phe Thr Tyr Thr Lys Ala Leu Val Ser Ser Gly
 85 90 95
 Ile Ala Ser Leu Phe Thr Glu Val Tyr Ser Gly Glu Thr Pro Ser Thr
 100 105 110
 Ile Leu Thr Cys Lys Pro Ile Phe Phe Gln Arg Leu Thr Pro Tyr Leu
 115 120 125
 Ser Phe Gly Arg Leu Asn Gly Gly Glu Ser Leu Tyr Met Arg Met Lys
 130 135 140
 Gln Ile Ala Val Gln Tyr Leu Lys Pro Pro Gln Thr
 145 150 155

<210>89

<211>345

<212>PRT

<213>Chlamydia pneumoniae

<400>89

Cys Leu Leu Phe Tyr Phe Phe His Tyr Arg Met Ser Thr Pro Leu Ser
 1 5 10 15
 Ser Gly Gly Ile Ser Pro Ser Asp Gln Tyr Val Pro Gln Glu Leu Phe
 20 25 30
 Cys Asp Arg Leu Ser Ser Ser Arg Ser Asn Ser Pro Asp Ser Asn Ala
 35 40 45
 Ser Gly Asp Ser Pro Ile Val Ser Pro Pro Ile Ser Ala Leu Val Ala
 50 55 60
 Leu Thr Asp Leu Lys Leu Val Pro Tyr Asn Gln Asn Ser Phe Ser Trp
 65 70 75 80
 Thr Thr Arg Leu Lys Asn Ala Val Glu Lys Ile Gly Leu Phe Leu Gln
 85 90 95
 Arg Asn Trp Lys Tyr Ile Leu Leu Tyr Ile Leu Ala Trp Ala Leu Ile
 100 105 110
 Leu Val Cys His His Thr Val Ala Leu Thr Leu Thr Ile Trp Leu Gly
 115 120 125
 Val Gly Leu Gly Ile Gly Val Val Phe Gly Ile Phe Thr Ala Thr Cys
 130 135 140
 Leu Asp Lys Glu Asn Lys His Arg His Val Asn Ser Leu Trp Asn Leu
 145 150 155 160
 Ile Asn His Gly Ile Leu Gln Leu Asp Pro Asn Gly Thr Arg Gln Ile
 165 170 175
 Leu Leu Ala Thr Met Ile Ala Ser Ile Ser Ala Leu Ile Tyr Ala Val
 180 185 190
 Pro Gln Ala Val Gly Leu Val Ile Gly Phe Ser Ile Gly Asn Gln Leu
 195 200 205
 Ser Ile Asn Thr Val Tyr Gly Ala Arg Leu Gly Asp Glu Ala Thr Tyr
 210 215 220
 Ala Ile Asp Arg Lys Ala His Lys Lys Arg Ile Glu Asn Ile Glu Gln
 225 230 235 240
 Ala Ile Asn Gln His Gln Ile Ile Lys His Gln Met Ile Asn Gln Lys
 245 250 255
 Gln Leu Asn Ala Leu Ile Glu Ile Asn Arg Asn Asn Gln Thr Asp Pro
 260 265 270
 Ala Thr Ala Asn Leu Leu Ala Ser Leu Lys Leu Asn Leu Asn Gln Pro
 275 280 285
 Met Pro Tyr Cys Phe Ser Met Pro Glu Cys Gly Val Thr Ser Ser Tyr
 290 295 300
 Leu Asp Leu Asn Asn Asn Ser Pro Asp Asp Ile Ile Ala Arg Ala Asp
 305 310 315 320
 Gln Cys Ile Met Thr Leu Ser Gln Thr Leu Gln Gln Ile Lys Lys Glu
 325 330 335
 Pro Asp Arg Ile Ile Glu Ser Asn His
 340 345

<210>90

<211>394

<212>PRT

<213>Chlamydia pneumoniae

<400>90

Met Ser Lys Glu Thr Phe Gln Arg Asn Lys Pro His Ile Asn Ile Gly
 1 5 10 15
 Thr Ile Gly His Val Asp His Gly Lys Thr Thr Leu Thr Ala Ala Ile
 20 25 30
 Thr Arg Ala Leu Ser Gly Asp Gly Leu Ala Ser Phe Arg Asp Tyr Ser
 35 40 45
 Ser Ile Asp Asn Thr Pro Glu Glu Lys Ala Arg Gly Ile Thr Ile Asn
 50 55 60
 Ala Ser His Val Glu Tyr Glu Thr Pro Asn Arg His Tyr Ala His Val
 65 70 75 80
 Asp Cys Pro Gly His Ala Asp Tyr Val Lys Asn Met Ile Thr Gly Ala
 85 90 95
 Ala Gln Met Asp Gly Ala Ile Leu Val Val Ser Ala Thr Asp Gly Ala
 100 105 110
 Met Pro Gln Thr Lys Glu His Ile Leu Leu Ala Arg Gln Val Gly Val
 115 120 125
 Pro Tyr Ile Val Val Phe Leu Asn Lys Val Asp Met Ile Ser Gln Glu
 130 135 140
 Asp Ala Glu Leu Ile Asp Leu Val Glu Met Glu Leu Ser Glu Leu Leu
 145 150 155 160
 Glu Glu Lys Gly Tyr Lys Gly Cys Pro Ile Ile Arg Gly Ser Ala Leu
 165 170 175
 Lys Ala Leu Glu Gly Asp Ala Asn Tyr Ile Glu Lys Val Arg Glu Leu
 180 185 190
 Met Gln Ala Val Asp Asp Xaa Ile Pro Thr Pro Glu Arg Glu Ile Asp
 195 200 205
 Lys Pro Phe Leu Met Pro Ile Glu Asp Val Phe Ser Ile Ser Gly Arg
 210 215 220
 Gly Thr Val Val Thr Gly Arg Ile Glu Arg Gly Ile Val Lys Val Ser
 225 230 235 240
 Asp Lys Val Gln Leu Val Gly Leu Gly Glu Thr Lys Glu Thr Ile Val
 245 250 255
 Thr Gly Val Glu Met Phe Arg Lys Glu Leu Pro Glu Gly Arg Ala Gly
 260 265 270
 Glu Asn Val Gly Leu Leu Leu Arg Gly Ile Gly Lys Asn Asp Val Glu
 275 280 285
 Arg Gly Met Val Val Cys Gln Pro Asn Ser Val Lys Pro His Thr Lys
 290 295 300
 Phe Lys Ser Ala Val Tyr Val Leu Gln Lys Glu Glu Gly Gly Arg His
 305 310 315 320
 Lys Pro Phe Phe Ser Gly Tyr Arg Pro Gln Phe Phe Phe Arg Thr Thr
 325 330 335
 Asp Val Thr Gly Val Val Thr Leu Pro Glu Gly Thr Glu Met Val Met
 340 345 350
 Pro Gly Asp Asn Val Glu Leu Asp Val Glu Leu Ile Gly Thr Val Ala
 355 360 365
 Leu Glu Glu Gly Met Arg Phe Ala Ile Arg Glu Gly Gly Arg Thr Ile
 370 375 380
 Gly Ala Gly Thr Ile Ser Lys Ile Asn Ala
 385 390

<210>91

<211>88

<212>PRT

<213>Chlamydia pneumoniae

<400>91

Ser Arg Ser Trp Phe Met Lys Gln Gln His Asn Arg Lys Ala Leu Ser
 1 5 10 15
 Arg Lys Ile Gly Thr Val Lys Lys Gln Ala Lys Phe Ala Gly Ser Phe
 20 25 30
 Leu Asp Glu Ile Lys Lys Ile Glu Trp Val Ser Lys His Asp Leu Lys
 35 40 45
 Lys Tyr Ile Lys Val Val Leu Ile Ser Ile Phe Gly Phe Gly Phe Ala

50 55 60
 Ile Tyr Phe Val Asp Leu Val Leu Arg Lys Ser Ile Thr Cys Leu Asp
 65 70 75 80
 Gly Ile Thr Thr Phe Leu Phe Gly
 85

<210>92

<211>190

<212>PRT

<213>Chlamydia pneumoniae

<400>92

Gln Pro Phe Cys Ser Val Asn Cys Met Tyr Lys Trp Tyr Val Val Gln
 1 5 10 15
 Val Phe Thr Ala Gln Glu Lys Lys Val Lys Lys Ala Leu Glu Asp Phe
 20 25 30
 Lys Glu Ser Ser Gly Met Thr Asp Phe Ile Gln Glu Ile Ile Leu Pro
 35 40 45
 Ile Glu Asn Val Met Glu Val Lys Lys Gly Glu His Lys Val Val Glu
 50 55 60
 Lys Tyr Ile Trp Pro Gly Tyr Leu Leu Val Lys Met His Leu Thr Asp
 65 70 75 80
 Glu Ser Trp Leu Tyr Val Lys Ser Thr Ala Gly Ile Val Glu Phe Leu
 85 90 95
 Gly Gly Gly Val Pro Val Ala Leu Ser Glu Asp Glu Val Arg Ser Ile
 100 105 110
 Leu Thr Asp Ile Glu Glu Lys Lys Ser Gly Val Val Gln Lys His Gln
 115 120 125
 Phe Glu Val Gly Ser Arg Val Lys Ile Asn Asp Gly Val Phe Val Asn
 130 135 140
 Phe Ile Gly Thr Val Ser Glu Val Phe His Asp Lys Gly Arg Leu Ser
 145 150 155 160
 Val Met Val Ser Ile Phe Gly Arg Glu Thr Arg Val Asp Asp Leu Glu
 165 170 175
 Phe Trp Gln Val Glu Glu Val Ala Pro Gly Gln Glu Ser Glu
 180 185 190

<210>93

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>93

Val Ser Gln Cys Lys Val Arg Phe Ser Met Ser Val Lys Lys Val Ile
 1 5 10 15
 Lys Ile Ile Lys Leu Gln Ile Pro Gly Gly Lys Ala Asn Pro Ala Pro
 20 25 30
 Pro Ile Gly Pro Ala Leu Gly Ala Ala Gly Val Asn Ile Met Gly Phe
 35 40 45
 Cys Lys Glu Phe Asn Ala Ala Thr Gln Asp Lys Pro Gly Asp Leu Leu
 50 55 60
 Pro Val Val Ile Thr Val Tyr Ala Asp Lys Thr Phe Thr Phe Ile Thr
 65 70 75 80
 Lys Gln Pro Pro Val Ser Ser Leu Ile Lys Lys Thr Leu Asn Leu Glu
 85 90 95
 Ser Gly Ser Lys Ile Pro Asn Arg Asn Lys Val Gly Lys Leu Thr Gln
 100 105 110
 Ala Gln Val Glu Ala Ile Ala Glu Gln Lys Met Lys Asp Met Asp Ile
 115 120 125
 Val Leu Leu Glu Ser Ala Lys Arg Met Val Glu Gly Thr Ala Arg Ser
 130 135 140
 Met Gly Ile Asp Val Glu
 145 150

<210>94

<211>232

<212>PRT

<213>Chlamydia pneumoniae

<400>94

Met Thr Lys His Gly Arg Ile Arg Gly Ile Leu Lys Asn Tyr Asp
 1 5 10 15
 Phe Ser Lys Ser Tyr Ser Leu Arg Glu Ala Ile Asp Ile Leu Lys Gln
 20 25 30
 Cys Pro Pro Val Arg Phe Asp Gln Thr Val Asp Val Ser Ile Lys Leu
 35 40 45
 Gly Ile Asp Pro Lys Lys Ser Asp Gln Gln Ile Arg Gly Ala Val Phe
 50 55 60
 Leu Pro Asn Gly Thr Gly Lys Thr Leu Arg Ile Leu Val Phe Ala Ser
 65 70 75 80
 Gly Asn Lys Val Lys Glu Ala Val Glu Ala Gly Ala Asp Phe Met Gly
 85 90 95
 Ser Asp Asp Leu Val Glu Lys Ile Lys Ser Gly Trp Leu Glu Phe Asp
 100 105 110
 Val Ala Val Ala Thr Pro Asp Met Met Arg Glu Val Gly Lys Leu Gly
 115 120 125
 Lys Val Leu Gly Pro Arg Asn Leu Met Pro Thr Pro Lys Thr Gly Thr
 130 135 140
 Val Thr Thr Asp Val Ala Lys Ala Ile Ser Glu Leu Arg Lys Gly Lys
 145 150 155 160
 Ile Glu Phe Lys Ala Asp Arg Ala Gly Val Cys Asn Val Gly Val Gly
 165 170 175
 Lys Leu Ser Phe Glu Ser Ser Gln Ile Lys Glu Asn Ile Glu Ala Leu
 180 185 190
 Ser Ser Ala Leu Ile Lys Ala Lys Pro Pro Ala Ala Lys Gly Gln Tyr
 195 200 205
 Leu Val Ser Phe Thr Ile Ser Ser Thr Met Gly Pro Gly Ile Ser Ile
 210 215 220
 Asp Thr Arg Glu Leu Met Ala Ser
 225 230

<210>95

<211>170

<212>PRT

<213>Chlamydia pneumoniae

<400>95

Met Lys Gln Glu Lys Thr Leu Leu Leu Gln Glu Val Glu Asp Lys Ile
 1 5 10 15
 Ser Ala Ala Gln Gly Phe Ile Leu Leu Arg Tyr Leu Arg Phe Thr Ala
 20 25 30
 Ala Tyr Ser Arg Glu Phe Arg Asn Ser Leu Ser Gly Val Ser Ala Glu
 35 40 45
 Phe Glu Val Leu Lys Lys Arg Ile Phe Phe Lys Ala Ile Glu Ala Ala
 50 55 60
 Gly Leu Glu Val Asp Cys Ser Asp Thr Asp Gly His Leu Gly Val Val
 65 70 75 80
 Phe Ser Cys Gly Asp Pro Val Ser Ala Ala Lys Gln Val Leu Asp Phe
 85 90 95
 Asn Lys Gln His Lys Asp Ser Leu Val Phe Leu Ala Gly Arg Met Asp
 100 105 110
 Asn Ala Ser Leu Ser Gly Ala Glu Val Glu Ala Val Ala Lys Leu Pro
 115 120 125
 Ser Leu Lys Glu Leu Arg Gln Gln Val Val Gly Leu Phe Ala Ala Pro
 130 135 140
 Met Ser Gln Val Val Gly Ile Met Asn Ser Val Leu Ser Gly Val Ile
 145 150 155 160
 Ser Cys Val Asp Gln Lys Ala Gly Lys Asn
 165 170

<210>96

<211>132

<212>PRT

<213>Chlamydia pneumoniae

<400>96

Val Thr Lys Val Thr Thr Glu Ser Leu Glu Thr Leu Val Glu Lys Leu
 1 5 10 15

Ser Asn Leu Thr Val Leu Glu Leu Ser Gln Leu Lys Lys Leu Leu Glu
 20 25 30
 Glu Lys Trp Asp Val Thr Ala Ser Ala Pro Val Val Ala Val Ala Ala
 35 40 45
 Gly Gly Gly Gly Glu Ala Pro Val Ala Ala Glu Pro Thr Glu Phe Ala
 50 55 60
 Val Thr Leu Glu Asp Val Pro Ala Asp Lys Lys Ile Gly Val Leu Lys
 65 70 75 80
 Val Val Arg Glu Val Thr Gly Leu Ala Leu Lys Glu Ala Lys Glu Met
 85 90 95
 Thr Glu Gly Leu Pro Lys Thr Val Lys Glu Lys Thr Ser Lys Ser Asp
 100 105 110
 Ala Glu Asp Thr Val Lys Lys Leu Gln Asp Ala Gly Ala Lys Ala Ser
 115 120 125
 Phe Lys Gly Leu
 130

<210>97

<211>1262

<212>PRT

<213>Chlamydia pneumoniae

<400>97

Leu Ser His Gln Asn Ser Arg Arg Thr Arg Thr Leu Lys Cys Pro Glu
 1 5 10 15
 Arg Val Ser Val Lys Lys Lys Glu Asp Ile Pro Asp Leu Pro Asn Leu
 20 25 30
 Ile Glu Ile Gln Ile Lys Ser Tyr Lys Gln Phe Leu Gln Ile Gly Lys
 35 40 45
 Leu Ala Glu Glu Arg Glu Asn Ile Gly Leu Glu Glu Val Phe Arg Glu
 50 55 60
 Ile Phe Pro Ile Lys Ser Tyr Asn Glu Ala Thr Val Leu Glu Tyr Leu
 65 70 75 80
 Ser Tyr Asn Leu Gly Val Pro Lys Tyr Ser Pro Glu Glu Cys Ile Arg
 85 90 95
 Arg Gly Ile Thr Tyr Ser Val Thr Leu Lys Val Arg Phe Arg Leu Thr
 100 105 110
 Asp Glu Thr Gly Ile Lys Glu Glu Glu Val Tyr Met Gly Thr Ile Pro
 115 120 125
 Leu Met Thr Asp Lys Gly Thr Phe Ile Ile Asn Gly Ala Glu Arg Val
 130 135 140
 Val Val Ser Gln Val His Arg Ser Pro Gly Ile Asn Phe Glu Gln Glu
 145 150 155 160
 Lys His Ser Lys Gly Asn Ile Leu Phe Ser Phe Arg Ile Ile Pro Tyr
 165 170 175
 Arg Gly Ser Trp Leu Glu Ala Ile Phe Asp Ile Asn Asp Leu Ile Tyr
 180 185 190
 Ile His Ile Asp Arg Lys Lys Arg Arg Arg Lys Ile Leu Ala Ile Thr
 195 200 205
 Phe Ile Arg Ala Leu Gly Tyr Ser Ser Asp Ala Asp Ile Ile Glu Glu
 210 215 220
 Phe Phe Thr Ile Gly Glu Ser Ser Leu Arg Ser Glu Lys Asp Phe Ala
 225 230 235 240
 Leu Leu Val Gly Arg Ile Leu Ala Asp Asn Ile Ile Asp Glu Ala Ser
 245 250 255
 Ser Leu Val Tyr Gly Lys Ala Gly Glu Lys Leu Ser Thr Ala Met Leu
 260 265 270
 Lys Arg Met Leu Asp Ala Gly Ile Ala Ser Val Lys Ile Ala Val Asp
 275 280 285
 Ala Asp Glu Asn His Pro Ile Ile Lys Met Leu Ala Lys Asp Pro Thr
 290 295 300
 Asp Ser Tyr Glu Ala Ala Leu Lys Asp Phe Tyr Arg Arg Leu Arg Pro
 305 310 315 320
 Gly Glu Pro Ala Thr Leu Ala Asn Ala Arg Ser Thr Ile Met Arg Leu
 325 330 335
 Phe Phe Asp Pro Lys Arg Tyr Asn Leu Gly Arg Val Gly Arg Tyr Lys

340	345	350
Leu Asn Arg Lys Leu Gly Phe Ser	Ile Asp Asp Glu Ala Leu Ser Gln	
355	360	365
Val Thr Leu Arg Lys Glu Asp Val	Ile Gly Ala Leu Lys Tyr Leu Ile	
370	375	380
Arg Leu Lys Met Gly Asp Glu Lys	Ala Cys Val Asp Asp Ile Asp His	
385	390	395
Leu Ala Asn Arg Arg Val Arg Ser	Val Gly Glu Leu Ile Gln Asn Gln	
405	410	415
Cys Arg Ser Gly Leu Ala Arg Met	Glu Lys Ile Val Arg Glu Arg Met	
420	425	430
Asn Leu Phe Asp Phe Ser Ser Asp	Thr Leu Thr Pro Gly Lys Val Val	
435	440	445
Ser Ala Lys Gly Leu Ala Ser Val	Leu Lys Asp Phe Phe Gly Arg Ser	
450	455	460
Gln Leu Ser Gln Phe Met Asp Gln	Thr Asn Pro Val Ala Glu Leu Thr	
465	470	475
His Lys Arg Arg Leu Ser Ala Leu	Gly Pro Gly Gly Leu Asn Arg Glu	
485	490	495
Arg Ala Gly Phe Glu Val Arg Asp	Val His Ala Ser His Tyr Gly Arg	
500	505	510
Ile Cys Pro Ile Glu Thr Pro Glu	Gly Pro Asn Ile Gly Leu Ile Thr	
515	520	525
Ser Leu Ser Ser Phe Ala Lys Ile	Asn Glu Phe Gly Phe Ile Glu Thr	
530	535	540
Pro Tyr Arg Ile Val Arg Asp Gly	Ile Val Thr Asp Glu Ile Glu Tyr	
545	550	555
Met Thr Ala Asp Val Glu Glu Glu	Cys Val Ile Ala Gln Ala Ser Ala	
565	570	575
Ser Leu Asp Glu Tyr Asn Met Phe	Thr Glu Pro Val Cys Trp Val Arg	
580	585	590
Tyr Ala Gly Glu Ala Phe Glu Ala	Asp Thr Ser Thr Val Thr His Met	
595	600	605
Asp Val Ser Pro Lys Gln Leu Val	Ser Ile Val Thr Gly Leu Ile Pro	
610	615	620
Phe Leu Glu His Asp Asp Ala Asn	Arg Ala Leu Met Gly Ser Asn Met	
625	630	635
Gln Arg Gln Ala Val Pro Leu Leu	Lys Thr Glu Ala Pro Val Val Gly	
645	650	655
Thr Gly Leu Glu Cys Arg Ala Ala	Lys Asp Ser Gly Ala Ile Val Val	
660	665	670
Ala Glu Glu Asp Gly Val Val Asp	Phe Val Asp Gly Tyr Lys Val Val	
675	680	685
Val Ala Ala Lys His Asn Pro Thr	Ile Lys Arg Thr Tyr His Leu Lys	
690	695	700
Lys Phe Leu Arg Ser Asn Ser Gly	Thr Cys Ile Asn Gln Gln Pro Leu	
705	710	715
Cys Ala Val Gly Asp Val Ile Thr	Lys Gly Asp Val Ile Ala Asp Gly	
725	730	735
Pro Ala Thr Asp Arg Gly Glu Leu	Ala Leu Gly Lys Asn Val Leu Val	
740	745	750
Ala Phe Met Pro Trp Tyr Gly Tyr	Asn Phe Glu Asp Ala Ile Ile Ile	
755	760	765
Ser Glu Lys Leu Ile Arg Glu Asp	Ala Tyr Thr Ser Ile Tyr Ile Glu	
770	775	780
Glu Phe Glu Leu Thr Ala Arg Asp	Thr Lys Leu Gly Lys Glu Glu Ile	
785	790	795
Thr Arg Asp Ile Pro Asn Val Ser	Asp Glu Val Leu Ala Asn Leu Gly	
805	810	815
Glu Asp Gly Ile Ile Arg Ile Gly	Ala Glu Val Lys Pro Gly Asp Ile	
820	825	830
Leu Val Gly Lys Ile Thr Pro Lys	Ser Glu Thr Glu Leu Ala Pro Glu	
835	840	845
Glu Arg Leu Leu Arg Ala Ile Phe	Gly Glu Lys Ala Ala Asp Val Lys	

850 855 860
 Asp Ala Ser Leu Thr Val Pro Pro Gly Thr Glu Gly Val Val Met Asp
 865 870 875 880
 Val Lys Val Phe Ser Arg Lys Asp Arg Leu Ser Lys Ser Asp Asp Glu
 885 890 895
 Leu Val Glu Glu Ala Val His Leu Lys Asp Leu Gln Lys Gly Tyr Lys
 900 905 910
 Asn Gln Val Ala Thr Leu Lys Thr Glu Tyr Arg Glu Lys Leu Gly Ala
 915 920 925
 Leu Leu Leu Asn Glu Lys Ala Pro Ala Ala Ile Ile His Arg Arg Thr
 930 935 940
 Ala Glu Ile Val Val His Glu Gly Leu Leu Phe Asp Gln Glu Thr Ile
 945 950 955 960
 Glu Arg Ile Glu Gln Glu Asp Leu Val Asp Leu Leu Met Pro Asn Cys
 965 970 975
 Glu Met Tyr Glu Val Leu Lys Gly Leu Leu Ser Asp Tyr Glu Thr Ala
 980 985 990
 Leu Gln Arg Leu Glu Ile Asn Tyr Lys Thr Glu Val Glu His Ile Arg
 995 1000 1005
 Glu Gly Asp Ala Asp Leu Asp His Gly Val Ile Arg Gln Val Lys Val
 1010 1015 1020
 Tyr Val Ala Ser Lys Arg Lys Leu Gln Val Gly Asp Lys Met Ala Gly
 1025 1030 1035 1040
 Arg His Gly Asn Lys Gly Val Val Ser Lys Ile Val Pro Glu Ala Asp
 1045 1050 1055
 Met Pro Tyr Leu Ser Asn Gly Glu Thr Val Gln Met Ile Leu Asn Pro
 1060 1065 1070
 Leu Gly Val Pro Ser Arg Met Asn Leu Gly Gln Val Leu Glu Thr His
 1075 1080 1085
 Leu Gly Tyr Ala Ala Lys Thr Ala Gly Ile Tyr Val Lys Thr Pro Val
 1090 1095 1100
 Phe Glu Gly Phe Pro Glu Gln Arg Ile Trp Asp Met Met Ile Glu Gln
 1105 1110 1115 1120
 Gly Leu Pro Glu Asp Gly Lys Ser Phe Leu Tyr Asp Gly Lys Thr Gly
 1125 1130 1135
 Glu Arg Phe Asp Asn Lys Val Val Ile Gly Tyr Ile Tyr Met Leu Lys
 1140 1145 1150
 Leu Ser His Leu Ile Ala Asp Lys Ile His Ala Arg Ser Ile Gly Pro
 1155 1160 1165
 Tyr Ser Leu Val Thr Gln Gln Pro Leu Gly Gly Lys Ala Gln Met Gly
 1170 1175 1180
 Gly Gln Arg Phe Gly Glu Met Glu Val Trp Ala Leu Glu Ala Tyr Gly
 1185 1190 1195 1200
 Val Ala His Met Leu Gln Glu Ile Leu Thr Val Lys Ser Asp Asp Val
 1205 1210 1215
 Ser Gly Arg Thr Arg Ile Tyr Glu Ser Ile Val Lys Gly Glu Asn Leu
 1220 1225 1230
 Leu Arg Ser Gly Thr Pro Glu Ser Phe Asn Val Leu Ile Lys Glu Met
 1235 1240 1245
 Gln Gly Leu Gly Leu Asp Val Arg Pro Met Val Val Asp Ala
 1250 1255 1260
 <210>98
 <211>1218
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>98
 Leu Glu Lys Ile Met Phe Gly Glu Asn Ser Arg Asp Ile Gly Val Leu
 1 5 10 15
 Ser Lys Glu Gly Leu Phe Asp Lys Leu Glu Ile Gly Ile Ala Ser Asp
 20 25 30
 Ile Thr Ile Arg Asp Lys Trp Ser Cys Gly Glu Ile Lys Lys Pro Glu
 35 40 45
 Thr Ile Asn Tyr Arg Thr Phe Lys Pro Glu Lys Gly Gly Leu Phe Cys
 50 55 60

Glu	Lys	Ile	Leu	Gly	Phe	Thr	Lys	Asp	Trp	Glu	Cys	Cys	Cys	Gly	Lys	65	70	75	80
Tyr	Lys	Lys	Ile	Lys	His	Lys	Gly	Ile	Val	Cys	Asp	Arg	Cys	Gly	Val	85	90	95	
Glu	Val	Thr	Leu	Ser	Lys	Val	Arg	Arg	Glu	Arg	Met	Ala	His	Ile	Glu	100	105	110	
Leu	Ala	Val	Pro	Ile	Val	His	Ile	Trp	Phe	Phe	Lys	Thr	Thr	Pro	Ser	115	120	125	
Arg	Ile	Gly	Asn	Val	Leu	Gly	Met	Thr	Ala	Ser	Asp	Leu	Glu	Arg	Val	130	135	140	
Ile	Tyr	Tyr	Glu	Glu	Tyr	Val	Val	Ile	Asp	Pro	Gly	Lys	Thr	Asp	Leu	145	150	155	160
Thr	Lys	Lys	Gln	Leu	Leu	Asn	Asp	Ala	Gln	Tyr	Arg	Glu	Val	Val	Glu	165	170	175	
Lys	Trp	Gly	Lys	Asp	Ala	Phe	Val	Ala	Lys	Met	Gly	Gly	Glu	Ala	Ile	180	185	190	
Tyr	Asp	Leu	Leu	Lys	Ser	Glu	Asp	Leu	Gln	Ser	Leu	Leu	Lys	Asp	Leu	195	200	205	
Lys	Glu	Arg	Leu	Arg	Lys	Thr	Lys	Ser	Gln	Gln	Ala	Arg	Met	Lys	Leu	210	215	220	
Ala	Lys	Arg	Leu	Lys	Ile	Glu	Gly	Phe	Val	Ser	Ser	Ser	Asn	His		225	230	235	240
Pro	Glu	Trp	Met	Val	Leu	Lys	Asn	Ile	Pro	Val	Val	Pro	Pro	Asp	Leu	245	250	255	
Arg	Pro	Leu	Val	Pro	Leu	Asp	Gly	Gly	Arg	Phe	Ala	Thr	Ser	Asp	Leu	260	265	270	
Asn	Asp	Leu	Tyr	Arg	Arg	Val	Ile	Asn	Arg	Asn	Asn	Arg	Leu	Lys	Ala	275	280	285	
Ile	Leu	Arg	Leu	Lys	Thr	Pro	Glu	Val	Ile	Val	Arg	Asn	Glu	Lys	Arg	290	295	300	
Met	Leu	Gln	Glu	Ala	Val	Asp	Ala	Leu	Phe	Asp	Asn	Gly	Arg	His	Gly	305	310	315	320
His	Pro	Val	Met	Gly	Ala	Gly	Asn	Arg	Pro	Leu	Lys	Ser	Leu	Ser	Glu	325	330	335	
Met	Leu	Lys	Gly	Lys	Asn	Gly	Arg	Phe	Arg	Gln	Asn	Leu	Leu	Gly	Lys	340	345	350	
Arg	Val	Asp	Tyr	Ser	Gly	Arg	Ser	Val	Ile	Ile	Val	Gly	Pro	Glu	Leu	355	360	365	
Lys	Phe	Asn	Gln	Cys	Gly	Leu	Pro	Lys	Glu	Met	Ala	Leu	Glu	Leu	Phe	370	375	380	
Glu	Pro	Phe	Ile	Ile	Xaa	Arg	Leu	Lys	Asp	Gln	Gly	Ser	Val	Tyr	Thr	385	390	395	400
Ile	Arg	Ser	Ala	Lys	Lys	Met	Ile	Gln	Arg	Gly	Ala	Pro	Glu	Val	Trp	405	410	415	
Asp	Val	Leu	Glu	Glu	Ile	Ile	Lys	Gly	His	Pro	Val	Leu	Leu	Asn	Arg	420	425	430	
Ala	Pro	Thr	Leu	His	Arg	Leu	Gly	Ile	Gln	Ala	Phe	Glu	Pro	Val	Leu	435	440	445	
Ile	Glu	Gly	Lys	Ala	Ile	Arg	Ile	His	Pro	Leu	Val	Cys	Ala	Ala	Phe	450	455	460	
Asn	Ala	Asp	Phe	Asp	Gly	Asp	Gln	Met	Ala	Val	His	Val	Pro	Leu	Ser	465	470	475	480
Val	Glu	Ala	Gln	Leu	Glu	Ala	Lys	Val	Leu	Met	Met	Ala	Pro	Asp	Asn	485	490	495	
Ile	Phe	Leu	Pro	Ser	Ser	Gly	Lys	Pro	Val	Ala	Ile	Pro	Ser	Lys	Asp	500	505	510	
Met	Thr	Leu	Gly	Leu	Tyr	Tyr	Leu	Met	Ala	Asp	Pro	Thr	Tyr	Phe	Pro	515	520	525	
Glu	Glu	His	Gly	Gly	Lys	Thr	Lys	Ile	Phe	Lys	Asp	Glu	Ile	Glu	Val	530	535	540	
Leu	Arg	Ala	Leu	Asn	Asn	Gly	Gly	Phe	Ile	Asp	Asp	Val	Phe	Gly	Asp	545	550	555	560
Arg	Arg	Asp	Glu	Thr	Gly	Arg	Gly	Ile	His	Ile	His	Glu	Lys	Ile	Lys	565	570	575	

Val	Arg	Ile	Asp	Gln	Ile	Ile	Glu	Thr	Thr	Pro	G	rg	Val	Leu
			580				585							
Phe	Asn	Arg	Ile	Val	Pro	Lys	Glu	Leu	Gly	Phe	Gln	Asn	Tyr	Met
		595					600					605		
Pro	Ser	Lys	Arg	Ile	Ser	Glu	Leu	Ile	Leu	Gln	Cys	Tyr	Lys	Val
		610				615					620			
Gly	Leu	Glu	Ala	Thr	Val	Arg	Phe	Leu	Asp	Asp	Leu	Lys	Asp	Gly
625					630					635				640
Phe	Ile	Gln	Ala	Thr	Lys	Ala	Ala	Ile	Ser	Met	Gly	Leu	Lys	Val
				645					650					655
Arg	Ile	Pro	Asp	Ile	Lys	Ser	His	Ile	Leu	Lys	Asp	Ala	Tyr	Lys
			660					665					670	
Val	Ala	Ile	Val	Lys	Lys	Gln	Tyr	Asp	Asp	Gly	Ile	Ile	Thr	Gly
		675					680					685		
Glu	Arg	His	Ser	Lys	Thr	Ile	Ser	Ile	Trp	Thr	Glu	Val	Ser	Gln
		690				695					700			
Leu	Ser	Asp	Ala	Leu	Tyr	Val	Glu	Ile	Ser	Lys	Gln	Thr	Arg	Lys
705					710					715				720
His	Asn	Pro	Leu	Phe	Leu	Met	Ile	Asp	Ser	Gly	Ala	Arg	Gly	Asn
				725					730					735
Ser	Gln	Leu	Lys	Gln	Leu	Gly	Ala	Leu	Arg	Gly	Leu	Met	Ala	Pro
			740					745					750	
Asn	Gly	Ala	Ile	Ile	Glu	Ser	Pro	Ile	Thr	Ser	Asn	Phe	Arg	Gly
		755					760					765		
Leu	Thr	Val	Leu	Glu	Tyr	Ser	Ile	Ser	Ser	His	Gly	Ala	Arg	Lys
		770				775					780			
Leu	Ala	Asp	Thr	Ala	Leu	Lys	Thr	Ala	Asp	Ser	Gly	Tyr	Leu	Arg
785					790					795				800
Arg	Leu	Val	Asp	Val	Ala	Gln	Asp	Val	Ile	Ile	Thr	Glu	Lys	Cys
				805					810					815
Gly	Thr	Leu	Asn	His	Ile	Glu	Ile	Ser	Ala	Ile	Gly	Gln	Gly	Glu
			820					825					830	
Glu	Leu	Leu	Pro	Leu	Lys	Asp	Arg	Ile	Tyr	Gly	Arg	Thr	Val	Ala
		835					840					845		
Asp	Val	Tyr	Gln	Pro	Gly	Asp	Lys	Ser	Arg	Leu	Leu	Ala	Gln	Ser
		850				855					860			
Asp	Val	Leu	Asn	Ser	Val	Gln	Ala	Glu	Ala	Ile	Asp	Asp	Ala	Gly
865					870					875				880
Glu	Thr	Ile	Lys	Ile	Arg	Ser	Thr	Leu	Thr	Cys	Glu	Ser	Pro	Arg
			885						890					895
Val	Cys	Ala	Lys	Cys	Tyr	Gly	Leu	Asn	Leu	Ala	Asn	Gly	Arg	Leu
			900					905					910	
Gly	Met	Gly	Glu	Ala	Val	Gly	Ile	Ile	Ala	Ala	Gln	Ser	Ile	Gly
		915					920					925		
Pro	Gly	Thr	Gln	Leu	Thr	Met	Arg	Thr	Phe	His	Leu	Gly	Gly	Ile
		930				935					940			
Ala	Thr	Ser	Ser	Thr	Pro	Glu	Ile	Ile	Thr	Asn	Ser	Asp	Gly	Leu
945					950					955				960
Val	Tyr	Met	Asp	Leu	Arg	Val	Val	Leu	Gly	Gln	Glu	Gly	His	Asn
				965					970					975
Val	Leu	Asn	Lys	Lys	Gly	Ala	Leu	His	Val	Val	Gly	Asp	Glu	Arg
			980					985					990	
Thr	Leu	Asn	Glu	Tyr	Lys	Lys	Leu	Leu	Ser	Thr	Lys	Ser	Ile	Glu
		995					1000					1005		
Leu	Glu	Val	Phe	Pro	Val	Glu	Leu	Gly	Val	Lys	Ile	Leu	Val	Ala
		1010				1015					1020			
Gly	Thr	Pro	Val	Ser	Gln	Gly	Gln	Arg	Ile	Ala	Glu	Val	Glu	Leu
1025					1030					1035				1040
Asn	Ile	Pro	Ile	Ile	Cys	Asp	Lys	Pro	Gly	Phe	Ile	Lys	Tyr	Glu
				1045					1050					1055
Leu	Val	Glu	Gly	Ile	Ser	Thr	Glu	Lys	Val	Val	Asn	Lys	Asn	Thr
			1060					1065					1070	
Leu	Val	Glu	Leu	Ile	Val	Lys	Gln	His	Arg	Gly	Glu	Leu	His	Gln
		1075					1080					1085		

```

Ile Ala Ile Tyr Asp      Ala Asp Leu Ser Glu Leu Val G   hr Tyr
 1090                1095                1100
Ala Ile Pro Ser Gly Ala Ile Ile Ser Val Glu Glu Gly Gln Arg Val
1105                1110                1115                1120
Asp Pro Gly Met Leu Leu Ala Arg Leu Pro Arg Gly Ala Ile Lys Thr
                1125                1130                1135
Lys Asp Ile Thr Gly Gly Leu Pro Arg Val Ala Glu Leu Val Glu Ala
                1140                1145                1150
Arg Lys Pro Glu Asp Ala Ala Asp Ile Ala Lys Ile Asp Gly Val Val
                1155                1160                1165
Asp Phe Lys Gly Ile Gln Lys Asn Lys Arg Ile Leu Val Val Cys Asp
                1170                1175                1180
Glu Met Thr Gly Met Glu Glu Glu His Leu Ile Pro Leu Thr Lys His
1185                1190                1195                1200
Leu Ile Val Gln Arg Gly Asp Ser Val Ile Lys Gly Ser Ser Leu Pro
                1205                1210                1215
Met Val

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<210>99

<211>186

<212>PRT

<213>Chlamydia pneumoniae

<400>99

```

Gly Gln Gln Leu Thr Asp Gly Leu Val Val Pro His Glu Ile Leu Glu
 1                5                10                15
Ile Cys Gly Val Arg Glu Leu Gln Lys Tyr Leu Val Asn Glu Val Gln
                20                25                30
Glu Val Tyr Arg Leu Gln Gly Val Asp Ile Asn Asp Lys His Ile Glu
                35                40                45
Ile Ile Val Arg Gln Met Leu Gln Lys Val Arg Ile Thr Asp Pro Gly
                50                55                60
Asp Thr Thr Leu Leu Phe Gly Glu Asp Val Asn Lys Lys Glu Phe Tyr
                65                70                75                80
Glu Glu Asn Arg Arg Thr Glu Glu Asp Gly Gly Lys Pro Ala Gln Ala
                85                90                95
Val Pro Val Leu Leu Gly Ile Thr Lys Ala Ser Leu Gly Thr Glu Ser
                100                105                110
Phe Ile Ser Ala Ala Ser Phe Gln Asp Thr Thr Arg Val Leu Thr Asp
                115                120                125
Ala Ala Cys Cys Ser Lys Thr Asp Tyr Leu Leu Gly Phe Lys Glu Asn
                130                135                140
Val Ile Met Gly His Met Ile Pro Gly Gly Thr Gly Phe Glu Thr His
145                150                155                160
Lys Arg Ile Lys Gln Tyr Leu Glu Lys Glu Gln Glu Asp Leu Val Phe
                165                170                175
Asp Phe Val Ser Glu Thr Glu Cys Val Xaa
                180                185

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<210>100

<211>337

<212>PRT

<213>Chlamydia pneumoniae

<400>100

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Leu Glu Ile Asn Ser Asp Ala Lys Val Pro Met Ser Asn Gln Phe Asp
 1                5                10                15
Gln Leu Lys Lys Leu Ser Thr Ile Val Cys Asp Ser Gly Asp Pro Glu
                20                25                30
Leu Val Lys Ala Ser Gly Ser Gln Asp Ala Thr Thr Asn Pro Ser Leu
                35                40                45
Ile Leu Lys Val Ala Gln Glu Pro Lys Phe Gln Glu Leu Leu Asn Glu
                50                55                60
Ala Val Val Trp Gly Ile Arg Gln Asn Gly Asp Asp Leu Gln Thr Leu
65                70                75                80
Ser Phe Ile Leu Asp Lys Ile Gln Val Asn Phe Ala Leu Glu Ile Ile
                85                90                95

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Lys Asn Ile Pro Arg Ile Ser Leu Glu Ile Asp Asn Arg Leu Ser
 100 105 110
 Phe Asn Val Glu Ala Met Val Gln Arg Ala Val Phe Leu Ser Gln Leu
 115 120 125
 Phe Glu Ala Met Gly Gly Asp Lys Lys Arg Leu Leu Val Lys Ile Pro
 130 135 140
 Gly Thr Trp Glu Gly Ile Arg Ala Val Glu Phe Leu Glu Ala Lys Gly
 145 150 155 160
 Ile Ala Cys Asn Val Thr Leu Ile Phe Asn Leu Val Gln Ala Ile Ala
 165 170 175
 Ala Ala Lys Ala Lys Ala Thr Leu Ile Ser Pro Phe Val Gly Arg Ile
 180 185 190
 Tyr Asp Trp Trp Ile Ala Ala Tyr Gly Asp Glu Gly Tyr Ser Ile Asp
 195 200 205
 Ala Asp Pro Gly Val Ala Ser Val Ser Asn Ile Tyr Ala Tyr Tyr Lys
 210 215 220
 Lys Phe Gly Ile Pro Thr Gln Ile Met Ala Ala Ser Phe Arg Thr Lys
 225 230 235 240
 Glu Gln Val Leu Ala Leu Ala Gly Cys Asp Leu Leu Thr Ile Ser Pro
 245 250 255
 Lys Leu Leu Asp Glu Leu Lys Lys Ser Gln His Pro Val Lys Lys Glu
 260 265 270
 Leu Asp Pro Ala Glu Ala Lys Lys Leu Asp Val Gln Pro Ile Glu Leu
 275 280 285
 Thr Glu Ser Phe Phe Arg Phe Leu Met Asn Glu Asp Ala Met Ala Thr
 290 295 300
 Xaa Lys Leu Ala Glu Gly Ile Arg Ile Phe Ala Gly Asp Thr Gln Ile
 305 310 315 320
 Leu Glu Thr Ala Ile Thr Glu Phe Ile Lys Gln Ile Ala Ala Glu Gly
 325 330 335
 Ala

<210>101

<211>132

<212>PRT

<213>Chlamydia pneumoniae

<400>101

Ser Glu Met Lys Asn Lys Met Asp Tyr Lys Ser Gln Leu Val Phe Ser
 1 5 10 15
 Cys Pro Cys Cys Cys Lys Gly Asn Val Cys Phe Ser Val Phe Asn Leu
 20 25 30
 Asp Val Ile Leu Thr Cys Asn Val Cys Ser Ser Thr Tyr Thr Phe Asp
 35 40 45
 Ser Val Ile Arg Asn Glu Ile Arg Gln Phe Val Ala Leu Cys Lys Arg
 50 55 60
 Ile His Asp Ala Asn Ser Ile Leu Gly Asn Ala Thr Val Ser Val Ser
 65 70 75 80
 Val Glu Asp Asn Gln Met Asp Ile Pro Phe Gln Leu Leu Phe Ser Arg
 85 90 95
 Phe Pro Val Val Leu Asn Leu Ser Leu Asp Gly Lys Lys Ile Ala Ile
 100 105 110
 Arg Phe Leu Phe Asp Ala Leu Asn Thr Ser Ile Leu His Gln Glu Ser
 115 120 125
 Asp Leu Ile Ser
 130

<210>102

<211>192

<212>PRT

<213>Chlamydia pneumoniae

<400>102

Asn Lys Ser Thr Ala Arg Lys Lys Ile Gly Lys Phe Glu Lys Lys Pro
 1 5 10 15
 Ser Leu Ser Pro Val Gln Trp Val Arg Tyr Ser Gly Lys Asn Tyr Ser
 20 25 30

Ile Gln Thr Pro Ser Trp Gln Cys Ile Asp Asp Lys Thr Gln Leu
 35 40 45
 Pro Glu Lys Leu Asp Val Leu Ile Gly Lys Gly Lys Gly Asn Leu
 50 55 60
 Thr Pro Thr Ile Asn Ile Ala Gln Glu Ile Thr Ser Lys Ser Ser Lys
 65 70 75 80
 Glu Tyr Ile Glu Glu Ile Leu Ala Tyr His Lys Ala Asn Glu Met Thr
 85 90 95
 Leu Glu Ser Gly Ile Phe Thr Gln Ile Gln Ser Pro Ser Gly Glu Phe
 100 105 110
 Thr Ile Ile Lys Thr Glu Lys Asn Ser Ser Trp Gly Arg Val Phe Cys
 115 120 125
 Leu Gln Ala Thr Thr Val Ile Asp His Thr Ala Tyr Ile Phe Thr Ser
 130 135 140
 Thr Ala Thr Leu Asp Asp Tyr Ala Glu Leu Ser Phe Thr Phe Leu Lys
 145 150 155 160
 Val Val Ser Ser Phe Gln Ile Arg Gly Gly Lys Glu Ala Thr Ser Gly
 165 170 175
 Asp Ala Ile Leu Glu Lys Ala Leu Glu Ala Leu Gln Asn Glu Asn Lys
 180 185 190

<210>103

<211>163

<212>PRT

<213>Chlamydia pneumoniae

<400>103

Asn Ile Met Ala Asn Leu Asn Ala Asp Gly Lys Leu Lys Gln Ile Cys
 1 5 10 15
 Asp Ala Leu Arg Leu Asp Thr Leu Lys Pro Ala Glu Asp Glu Ala Ala
 20 25 30
 Ala Leu Leu His Asn Ala Lys Glu Gln Ala Lys Arg Ile Ile Gln Glu
 35 40 45
 Ala Gln Glu Glu Ala Arg Lys Ile Leu Glu Thr Ala Glu Glu Arg Ala
 50 55 60
 His Gln Lys Ile Lys Gln Gly Glu Val Ala Leu Ser Gln Ala Gly Lys
 65 70 75 80
 Arg Ala Leu Glu Ala Leu Lys Gln Ala Val Glu Asn Lys Ile Phe Arg
 85 90 95
 Glu Ser Leu Val Glu Trp Leu Glu His Val Thr Thr Asp Pro Glu Val
 100 105 110
 Ser Thr Lys Leu Ile Gln Ala Leu Val Gln Ala Leu Glu Ala Gln Gly
 115 120 125
 Val Ser Gly Asn Leu Thr Ala Tyr Ile Gly Lys His Val Ser Pro Arg
 130 135 140
 Ala Val Asn Glu Leu Leu Arg Lys Gly Cys Asn Asn Lys Asn Tyr Glu
 145 150 155 160
 Arg Lys Val

<210>104

<211>211

<212>PRT

<213>Chlamydia pneumoniae

<400>104

Ser His Glu Lys Ile Phe Ser Ile Phe Lys Val Val Val Met Thr Gln
 1 5 10 15
 Tyr Tyr Phe Leu Ser Ser Phe Leu Pro Thr Gln Leu Pro Glu Ser Val
 20 25 30
 Pro Leu Phe Ser Ile Ser Asp Leu Asp Asp Leu Leu Tyr Leu Asn Leu
 35 40 45
 Ser Glu Asn Asp Leu Cys Asn Tyr Gly Leu Leu Lys Arg Phe Phe Asp
 50 55 60
 Phe Glu Asn Phe Ala Phe Phe Trp Ala Gly Lys Pro Ile Pro Phe Ser
 65 70 75 80
 Phe Gly Glu Val Thr Gln Glu Asn Val Glu Arg Met Leu Ser Ser Gln
 85 90 95

Gln Trp Ser Asp Asn Asp Phe Glu Asp Phe Phe Lys Asp Phe Leu
 100 105 110
 Met Asn His Lys Ser Ser Gln Asp Leu Asn His Phe Ser Asp Leu
 115 120 125
 Phe Arg Glu Phe Leu Ser Tyr His Gln Thr Asn Ser Ser Lys Phe Leu
 130 135 140
 Gln Asp Tyr Phe Arg Phe Gln Gln Gln Leu Arg Val Val Leu Ala Gly
 145 150 155 160
 Phe Arg Ala Arg Val Leu Asn Met Asp Val Ser Tyr Val Leu Arg Asp
 165 170 175
 Glu Asp Ser Ser Asp Pro Val Val Leu Glu Val Leu Met Gln Lys Asp
 180 185 190
 Ser Pro Asn Tyr Glu Xaa Pro Glu Glu Phe Xaa Asp Leu Gln Gly Val
 195 200 205
 Leu Asp Asp
 210
 <210>105
 <211>440
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>105
 Lys Arg Gln Ser Asn Gly Asn Ser Phe Arg Thr Lys Leu Ala Gln Gly
 1 5 10 15
 His Val Ile Glu Ala Tyr Gly Asn Leu Leu Arg Val Arg Phe Asp Gly
 20 25 30
 Tyr Val Arg Gln Gly Glu Val Ala Tyr Val Asn Val Asp Asn Thr Trp
 35 40 45
 Leu Lys Ala Glu Val Ile Glu Val Ala Asp Gln Glu Val Lys Val Gln
 50 55 60
 Val Phe Glu Asp Thr Gln Gly Ala Cys Arg Gly Ala Leu Val Thr Phe
 65 70 75 80
 Ser Gly His Leu Leu Glu Ala Glu Leu Gly Pro Gly Leu Leu Gln Gly
 85 90 95
 Ile Phe Asp Gly Leu Gln Asn Arg Leu Glu Val Leu Ala Glu Asp Ser
 100 105 110
 Ser Phe Leu Gln Arg Gly Lys His Val Asn Ala Ile Ser Asp His Asn
 115 120 125
 Leu Trp Asn Tyr Thr Pro Val Ala Ser Val Gly Asp Thr Leu Arg Arg
 130 135 140
 Gly Asp Leu Leu Gly Thr Val Pro Glu Gly Arg Phe Thr His Lys Ile
 145 150 155 160
 Met Val Pro Phe Ser Cys Phe Gln Glu Val Thr Leu Thr Trp Val Ile
 165 170 175
 Ser Glu Gly Thr Tyr Asn Ala His Thr Val Val Ala Lys Ala Arg Asp
 180 185 190
 Ala Gln Gly Lys Glu Cys Ala Phe Thr Met Val Gln Arg Trp Pro Ile
 195 200 205
 Lys Gln Ala Phe Ile Glu Gly Lys Ile Pro Ala His Lys Ile Met
 210 215 220
 Asp Val Gly Leu Arg Ile Leu Asp Thr Gln Ile Pro Val Leu Lys Gly
 225 230 235 240
 Gly Thr Phe Cys Thr Pro Gly Pro Phe Gly Ala Gly Lys Thr Val Leu
 245 250 255
 Gln His His Leu Ser Lys Tyr Ala Ala Val Asp Ile Val Ile Leu Cys
 260 265 270
 Ala Cys Gly Glu Arg Ala Gly Glu Val Val Glu Val Leu Gln Glu Phe
 275 280 285
 Pro His Leu Ile Asp Pro His Thr Gly Lys Ser Leu Met His Arg Thr
 290 295 300
 Cys Ile Ile Cys Asn Thr Ser Ser Met Pro Val Ala Ala Arg Glu Ser
 305 310 315 320
 Ser Ile Tyr Leu Gly Val Thr Ile Ala Glu Tyr Tyr Arg Gln Met Gly
 325 330 335
 Leu Asp Ile Leu Leu Leu Ala Asp Ser Thr Ser Arg Trp Ala Gln Ala

340 345 350
 Leu Arg Glu Ile Ser Gly Arg Leu Glu Glu Ile Pro Gly Glu Glu Ala
 355 360 365
 Phe Pro Ala Tyr Leu Ser Ser Arg Ile Ala Ala Phe Tyr Glu Arg Gly
 370 375 380
 Gly Ala Ile Thr Thr Lys Asp Gly Ser Glu Gly Ser Leu Thr Ile Cys
 385 390 395 400
 Gly Ala Val Ser Pro Ala Gly Gly Asn Phe Glu Glu Pro Val Thr Gln
 405 410 415
 Ser Thr Leu Ala Val Val Gly Ala Phe Cys Gly Leu Ser Lys Ala Arg
 420 425 430
 Leu Thr His Val Gly Ile Leu Gln
 435 440

<210>106

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>106

Arg Thr Ser His Ser Ile Tyr Ile Ser Cys Ser Arg Ser Val Leu Trp
 1 5 10 15
 Ser Phe Lys Ser Thr Thr Asp Ala Arg Arg Tyr Pro Ser Ile Asp Pro
 20 25 30
 Leu Ile Ser Trp Ser Lys Tyr Leu Asn Gln Val Gly Gln Ile Leu Glu
 35 40 45
 Glu Lys Val Ser Gly Trp Gly Gly Ala Val Lys Lys Ala Ala Gln Phe
 50 55 60
 Leu Glu Lys Gly Ser Glu Ile Gly Lys Arg Met Glu Val Val Gly Glu
 65 70 75 80
 Glu Gly Val Ser Met Glu Asp Met Glu Ile Tyr Leu Lys Ala Glu Leu
 85 90 95
 Tyr Asp Phe Cys Tyr Leu Gln Gln Asn Ala Phe Asp Pro Val Asp Cys
 100 105 110
 Tyr Cys Pro Phe Glu Arg Gln Ile Glu Leu Phe Ser Leu Ile Ser Arg
 115 120 125
 Ile Phe Asp Ala Lys Phe Val Phe Asp Ser Pro Asp Asp Ala Arg Ser
 130 135 140
 Phe Phe Leu Glu Leu Gln Ser Lys Ile Lys Thr Leu Asn Gly Leu Lys
 145 150 155 160
 Phe Leu Ser Glu Glu Tyr His Glu Ser Lys Glu Val Ile Val Arg Leu
 165 170 175
 Leu Glu Lys Thr Met Val Gln Met Ala
 180 185

<210>107

<211>438

<212>PRT

<213>Chlamydia pneumoniae

<400>107

Met Gln Thr Ile Tyr Thr Lys Ile Thr Asp Ile Lys Gly Asn Leu Ile
 1 5 10 15
 Thr Val Glu Ala Glu Gly Ala Arg Leu Gly Glu Leu Ala Thr Ile Thr
 20 25 30
 Arg Ser Asp Gly Arg Ser Ser Tyr Ala Ser Val Leu Arg Phe Asp Leu
 35 40 45
 Lys Lys Val Thr Leu Gln Val Phe Gly Gly Thr Ser Gly Leu Ser Thr
 50 55 60
 Gly Asp His Val Thr Phe Leu Gly Arg Pro Met Glu Val Thr Phe Gly
 65 70 75 80
 Ser Ser Leu Leu Gly Arg Arg Leu Asn Gly Ile Gly Lys Pro Ile Asp
 85 90 95
 Asn Glu Gly Glu Cys Phe Gly Glu Pro Ile Glu Ile Ala Thr Pro Thr
 100 105 110
 Phe Asn Pro Val Cys Arg Ile Val Pro Arg Ser Met Val Arg Thr Asn
 115 120 125
 Ile Pro Met Ile Asp Val Phe Asn Cys Leu Val Lys Ser Gln Lys Ile

130 135 140
 Pro Ile Phe Ser Ser Ser Gly Glu His His Asn Ala Leu Leu Met Arg
 145 150 155 160
 Ile Ala Ala Gln Thr Asp Ala Asp Ile Val Val Ile Gly Gly Met Gly
 165 170 175
 Leu Thr Phe Val Asp Tyr Ser Phe Phe Val Glu Glu Ser Lys Lys Leu
 180 185 190
 Gly Phe Ala Asp Lys Cys Val Met Phe Ile His Lys Ala Val Asp Ala
 195 200 205
 Pro Val Glu Cys Val Leu Val Pro Asp Met Ala Leu Ala Cys Ala Glu
 210 215 220
 Lys Phe Ala Val Glu Glu Lys Lys Asn Val Leu Val Leu Leu Thr Asp
 225 230 235 240
 Met Thr Ala Phe Ala Asp Ala Leu Lys Glu Ile Ser Ile Thr Met Asp
 245 250 255
 Gln Ile Pro Ala Asn Arg Gly Tyr Pro Gly Ser Leu Tyr Ser Asp Leu
 260 265 270
 Ala Leu Arg Tyr Glu Lys Ala Val Glu Ile Ala Asp Gly Gly Ser Ile
 275 280 285
 Thr Leu Ile Thr Val Thr Thr Met Pro Ser Asp Asp Ile Thr His Pro
 290 295 300
 Val Pro Asp Asn Thr Gly Tyr Ile Thr Glu Gly Gln Phe Tyr Leu Arg
 305 310 315 320
 Asn Asn Arg Ile Asp Pro Phe Gly Ser Leu Ser Arg Leu Lys Gln Leu
 325 330 335
 Val Ile Gly Lys Val Thr Arg Glu Asp His Gly Asp Leu Ala Asn Ala
 340 345 350
 Leu Ile Arg Leu Tyr Ala Asp Ser Arg Lys Ala Thr Glu Arg Met Ala
 355 360 365
 Met Gly Phe Lys Leu Ser Asn Trp Asp Lys Lys Leu Leu Ala Phe Ser
 370 375 380
 Glu Leu Phe Glu Thr Arg Leu Met Ser Leu Glu Val Asn Ile Pro Leu
 385 390 395 400
 Glu Glu Ala Leu Asp Ile Gly Trp Lys Ile Leu Ala Gln Ser Phe Thr
 405 410 415
 Ser Glu Glu Val Gly Ile Lys Ala Gln Leu Ile Asn Lys Tyr Trp Pro
 420 425 430
 Lys Ala Cys Leu Ser Lys
 435

<210>108

<211>214

<212>PRT

<213>Chlamydia pneumoniae

<400>108

Val Leu Ala Lys Ser Met Ser Val Gln Val Lys Leu Thr Lys Asn Ser
 1 5 10 15
 Phe Arg Leu Glu Lys Gln Lys Leu Ala Arg Leu Gln Thr Tyr Leu Pro
 20 25 30
 Thr Leu Lys Leu Lys Lys Ala Leu Gln Ala Glu Val Gln Asn Ala
 35 40 45
 Val Lys Asp Ala Ala Glu Cys Asp Lys Asp Tyr Val Gln Ala Tyr Glu
 50 55 60
 Arg Ile Tyr Ala Phe Ala Glu Leu Phe Ser Ile Pro Leu Cys Thr Asp
 65 70 75 80
 Cys Val Glu Lys Ser Phe Glu Ile Gln Ser Ile Asp Asn Asp Phe Glu
 85 90 95
 Asn Ile Ala Gly Val Glu Val Pro Ile Val Arg Glu Val Thr Leu Phe
 100 105 110
 Pro Ala Ser Tyr Ser Leu Leu Gly Thr Pro Ile Trp Leu Asp Thr Met
 115 120 125
 Leu Ser Ala Ser Lys Glu Leu Val Val Lys Lys Val Met Ala Glu Val
 130 135 140
 Ser Lys Glu Arg Leu Lys Ile Leu Glu Glu Glu Leu Arg Ala Val Ser
 145 150 155 160


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Ile Arg Val Asn Leu Phe Glu Lys Lys Leu Ile Pro Glu T hr Lys
165 170 175
Ile Leu Lys Lys Ile Ala Val Phe Leu Ser Asp Arg Ser Ile Thr Asp
180 185 190
Val Gly Gln Val Lys Met Ala Lys Lys Lys Ile Glu Leu Arg Lys Ala
195 200 205
Arg Gly Asp Glu Cys Val
210
<210>109
<211>660
<212>PRT
<213>Chlamydia pneumoniae
<400>109
Val Arg Leu Asn Ile His Lys Tyr Leu Phe Ile Gly Arg Asn Lys Ala
1 5 10 15
Asp Phe Phe Ser Ala Ser Arg Glu Leu Gly Val Val Glu Phe Ile Ser
20 25 30
Lys Lys Cys Phe Ile Thr Thr Glu Gln Gly His Arg Phe Val Glu Cys
35 40 45
Leu Lys Val Phe Asp His Leu Glu Ala Glu Tyr Ser Leu Glu Ala Leu
50 55 60
Glu Phe Val Lys Asp Glu Ser Val Ser Val Glu Asp Ile Val Ser Glu
65 70 75 80
Val Leu Thr Leu Asn Lys Glu Ile Lys Gly Leu Leu Glu Thr Val Lys
85 90 95
Ala Leu Arg Lys Glu Ile Val Arg Val Lys Pro Leu Gly Ala Phe Ser
100 105 110
Ser Ser Glu Ile Ala Glu Leu Ser Arg Lys Thr Gly Ile Ser Leu Arg
115 120 125
Phe Phe Tyr Arg Thr His Lys Asp Asn Glu Asp Leu Glu Glu Asp Ser
130 135 140
Pro Asn Val Phe Tyr Leu Ser Thr Ala Tyr Asn Phe Asp Tyr Tyr Leu
145 150 155 160
Val Leu Gly Val Val Asp Leu Pro Arg Asp Arg Tyr Thr Glu Ile Glu
165 170 175
Ala Pro Arg Ser Val Asn Glu Leu Gln Val Asp Leu Ala Asn Leu Gln
180 185 190
Arg Glu Ile Arg Asn Arg Ser Asp Arg Leu Cys Asp Leu Tyr Ala Tyr
195 200 205
Arg Arg Glu Val Leu Arg Gly Leu Cys Asn Tyr Asp Asn Glu Gln Arg
210 215 220
Leu His Gln Ala Lys Glu Cys Cys Glu Asp Leu Phe Asp Gly Lys Val
225 230 235 240
Phe Ala Val Ala Gly Trp Val Ile Val Asp Arg Ile Lys Glu Leu Gln
245 250 255
Ser Leu Cys Asn Arg Tyr Gln Ile Tyr Met Glu Arg Val Pro Val Asp
260 265 270
Pro Asp Glu Thr Ile Pro Thr Tyr Leu Glu Asn Lys Gly Val Gly Val
275 280 285
Met Gly Glu Asp Leu Val Gln Ile Tyr Asp Thr Pro Ala Tyr Ser Asp
290 295 300
Lys Asp Pro Ser Thr Trp Val Phe Phe Ala Phe Val Leu Phe Phe Ser
305 310 315 320
Met Ile Val Asn Asp Ala Gly Tyr Gly Leu Leu Phe Leu Met Ser Ser
325 330 335
Leu Leu Phe Ser Trp Lys Phe Arg Arg Lys Met Lys Phe Ser Lys His
340 345 350
Leu Ser Arg Met Leu Lys Met Thr Ala Ile Leu Gly Leu Gly Cys Ile
355 360 365
Cys Trp Gly Thr Thr Thr Thr Ser Phe Phe Gly Met Ser Phe Ser Lys
370 375 380
Thr Ser Val Phe Arg Glu Tyr Ser Met Thr His Val Leu Ala Leu Lys
385 390 395 400
Lys Ala Glu Tyr Tyr Leu Gln Met Arg Pro Lys Ala Tyr Lys Glu Leu

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Thr Asn Glu Tyr Pro Ser Leu Lys Ala Ile Arg Asp Pro Lys Ala Phe
 420 425 430
 Leu Leu Ala Thr Glu Ile Gly Ser Ala Gly Ile Glu Ser Arg Tyr Val
 435 440 445
 Val Tyr Asp Lys Phe Ile Asp Asn Ile Leu Met Glu Leu Ala Leu Phe
 450 455 460
 Ile Gly Val Val His Leu Ser Leu Gly Met Leu Arg Tyr Leu Arg Tyr
 465 470 475 480
 Arg Tyr Ser Gly Ile Gly Trp Ile Leu Phe Met Val Ser Ala Tyr Leu
 485 490 495
 Tyr Val Pro Ile Tyr Leu Gly Thr Val Ser Leu Ile His Tyr Leu Phe
 500 505 510
 His Val Pro Tyr Glu Leu Gly Gly Gln Ile Gly Tyr Tyr Gly Met Phe
 515 520 525
 Gly Gly Ile Gly Leu Ala Val Val Leu Ala Met Ile Gln Arg Ser Trp
 530 535 540
 Arg Gly Val Glu Glu Ile Ile Ser Val Ile Gln Val Phe Ser Asp Val
 545 550 555 560
 Leu Ser Tyr Leu Arg Ile Tyr Ala Leu Gly Leu Ala Gly Ala Met Met
 565 570 575
 Gly Ala Thr Phe Asn Gln Met Gly Ala Arg Leu Pro Met Leu Leu Gly
 580 585 590
 Ser Ile Val Ile Leu Leu Gly His Ser Val Asn Ile Ile Leu Ser Ile
 595 600 605
 Met Gly Gly Val Ile His Gly Leu Arg Leu Asn Phe Ile Glu Trp Tyr
 610 615 620
 His Tyr Ser Phe Asp Gly Gly Gly Arg Pro Leu Arg Pro Leu Arg Lys
 625 630 635 640
 Ile Val Cys Ser Glu Asp Ala Glu Ala Ser Gly Ile His Leu Asp Asn
 645 650 655
 Asn Ser Ile Val
 660

<210>110

<211>149

<212>PRT

<213>Chlamydia pneumoniae

<400>110

Leu Lys Gly Ala His Glu Val Ser Met Ile Asp Met Ser Val Val Gly
 1 5 10 15
 Pro Ala Leu Val Leu Gly Leu Ala Met Ile Gly Ser Ala Ile Gly Cys
 20 25 30
 Gly Met Ala Gly Val Ala Ser His Ala Val Met Ser Arg Ile Asp Glu
 35 40 45
 Gly His Gly Lys Leu Ile Gly Met Ser Ala Met Pro Ser Ser Gln Ser
 50 55 60
 Ile Tyr Gly Phe Ile Leu Met Leu Leu Met Gln Ala Ala Ile Lys Asn
 65 70 75 80
 Gly Thr Leu Ser Pro Val Gly Gly Ile Ala Ile Gly Leu Ser Val Gly
 85 90 95
 Ala Ala Leu Leu Val Ser Ser Val Met Gln Gly Lys Cys Cys Val Ser
 100 105 110
 Gly Ile Gln Ala Tyr Ala Arg Ser Ser Ser Ile Tyr Gly Lys Cys Tyr
 115 120 125
 Ala Ala Ile Gly Ile Val Glu Ser Phe Ser Leu Phe Ala Val Val Phe
 130 135 140
 Ala Leu Leu Leu Leu
 145

<210>111

<211>940

<212>PRT

<213>Chlamydia pneumoniae

<400>111

Met Thr Thr Glu Asp Phe Pro Lys Ala Tyr Asn Phe Gln Asp Thr Glu

1	5	10	15
Pro Glu Leu Tyr Val Phe Trp Glu Lys Asn Gly Met Phe Lys Ala Glu			
20	25	30	
Ala Ser Ser Asp Lys Pro Pro Tyr Ser Val Ile Met Pro Pro Asn			
35	40	45	
Val Thr Gly Val Leu His Met Gly His Ala Leu Val Asn Thr Leu Gln			
50	55	60	
Asp Val Leu Val Arg Tyr Lys Arg Met Ser Gly Phe Glu Val Cys Trp			
65	70	75	80
Ile Pro Gly Thr Asp His Ala Gly Ile Ala Thr Gln Ala Val Val Glu			
85	90	95	
Arg His Leu Gln Ala Ser Glu Gly Lys Arg Arg Thr Asp Tyr Ser Arg			
100	105	110	
Glu Asp Phe Leu Lys His Ile Trp Ala Trp Lys Glu Lys Ser Glu Lys			
115	120	125	
Val Val Leu Ser Gln Leu Arg Gln Leu Gly Cys Ser Cys Asp Trp Asp			
130	135	140	
Arg Lys Arg Phe Thr Met Glu Pro Leu Ala Asn Arg Ala Val Lys Lys			
145	150	155	160
Ala Phe Lys Thr Leu Phe Glu Asn Gly Tyr Ile Tyr Arg Gly Tyr Tyr			
165	170	175	
Leu Val Asn Trp Asp Pro Val Leu Gln Thr Ala Leu Ala Asp Asp Glu			
180	185	190	
Val Glu Tyr Glu Glu Lys Asp Gly Trp Leu Tyr Tyr Ile Arg Tyr Arg			
195	200	205	
Met Val Gly Ser Gln Glu Ser Ile Val Val Ala Thr Thr Arg Pro Glu			
210	215	220	
Thr Ser Leu Gly Asp Thr Gly Ile Ala Val Ser Pro Asn Asp Glu Arg			
225	230	235	240
Tyr Ala Ser Trp Ile Gly Ala Ser Val Glu Val Pro Phe Val Asn Arg			
245	250	255	
Gln Ile Pro Ile Ile Gly Asp Ala Ser Val Asp Pro Thr Phe Gly Thr			
260	265	270	
Gly Ala Val Lys Val Thr Pro Ala His Asp Lys Asp Asp Tyr Leu Met			
275	280	285	
Gly Thr Asn His His Leu Pro Met Ile Asn Ile Leu Thr Pro Ser Gly			
290	295	300	
Gly Ile Asn Glu Asn Gly Gly Pro Phe Ala Gly Met Ala Lys Glu Lys			
305	310	315	320
Ala Arg Glu Glu Ile Leu Ile Ala Leu Glu Glu Gln Gly Leu Phe Val			
325	330	335	
Arg Lys Glu Pro Tyr Lys Leu Arg Val Gly Val Ser Tyr Arg Ser Gly			
340	345	350	
Ala Val Ile Glu Pro Tyr Leu Ser Lys Gln Trp Phe Val Ser Val Ser			
355	360	365	
Glu Phe Arg Gly Ala Leu Arg Glu Phe Val Glu Ser Gln Asp Ile Lys			
370	375	380	
Ile Phe Pro Lys Asp Phe Val Lys Asn Tyr Leu Ser Trp Val Asn His			
385	390	395	400
Leu Arg Asp Trp Cys Ile Ser Arg Gln Leu Trp Trp Gly His Arg Ile			
405	410	415	
Pro Val Trp Tyr His Lys Asn His Asp Glu Arg Val Leu Cys Tyr Asp			
420	425	430	
Gly Glu Gly Ile Pro Glu Glu Val Ala Gln Asp Pro Asp Ser Trp Tyr			
435	440	445	
Gln Asp Pro Asp Val Leu Asp Thr Trp Phe Ser Ser Gly Leu Trp Pro			
450	455	460	
Leu Thr Cys Leu Gly Trp Pro Asp Glu Asn Ser Pro Asp Leu Lys Lys			
465	470	475	480
Phe Tyr Pro Thr Ala Leu Leu Val Thr Gly His Asp Ile Leu Phe Phe			
485	490	495	
Trp Val Thr Arg Met Val Leu Leu Cys Ser Ser Met Ser Gly Glu Lys			
500	505	510	
Pro Phe Ser Glu Val Phe Leu His Gly Leu Ile Phe Gly Lys Ser Tyr			

515 520 525
 Lys Arg Tyr Asn Asp Phe Gly Glu Trp Ser Tyr Ile Ser Gly Lys Glu
 530 535 540
 Lys Leu Ala Tyr Asp Met Gly Glu Ala Leu Pro Asp Gly Val Val Ala
 545 550 555 560
 Lys Trp Glu Lys Leu Ser Lys Ser Lys Gly Asn Val Ile Asp Pro Leu
 565 570 575
 Glu Met Ile Ala Thr Tyr Gly Thr Asp Ala Val Arg Leu Thr Leu Cys
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 Ser Cys Ala Asn Arg Gly Glu Gln Ile Asp Leu Asp Tyr Arg Leu Phe
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 Glu Glu Tyr Lys His Phe Ala Asn Lys Val Trp Asn Gly Ala Arg Phe
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 Ile Asp Glu Asp Ser Leu Gly Leu Glu Asp Phe Tyr Ile Leu Asp Gly
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 Phe Asn Gln Leu Ile His Gln Leu Glu Glu Ala Tyr Ala Thr Tyr Ala
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 Phe Asp Lys Val Ala Thr Leu Ala Tyr Glu Phe Phe Arg Asn Asp Leu
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 Cys Ser Thr Tyr Ile Glu Ile Lys Pro Thr Leu Phe Gly Lys Gln
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 Gly Asp Gly Asp Ala Phe Thr Gly His Ala Leu Arg Met Leu Arg Ser
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 Arg Ala Cys Met Glu Ala Pro Tyr Pro Lys Ala Phe Asp Val Lys Ile
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 Asp Lys Glu Pro Glu Lys Gly Leu Tyr Ser Phe Gly Val Val Asp Thr
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 35 40 45

Arg Glu Asp Leu Ala Glu Asn Pro Leu Leu Lys Arg Arg Phe Leu Arg
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 Glu Ala Arg Ile Ala Ala Asp Leu Ile His Pro Gly Val Val Pro Val
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 Tyr Thr Ile Tyr Ser Glu Lys Asp Pro Val Tyr Tyr Thr Met Pro Tyr
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 Ile Glu Gly Tyr Thr Leu Lys Thr Leu Leu Lys Ser Val Trp Gln Lys
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 Glu Ser Leu Ser Lys Glu Leu Ala Glu Lys Thr Ser Val Gly Ala Phe
 115 120 125
 Leu Ser Ile Phe His Lys Ile Cys Cys Thr Ile Glu Tyr Val His Ser
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 Arg Gly Ile Leu His Arg Asp Leu Lys Pro Asp Asn Ile Leu Leu Gly
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 Leu Phe Ser Glu Ala Val Ile Leu Asp Trp Gly Ala Ala Val Ala Cys
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 Gly Glu Glu Glu Asp Leu Leu Asp Ile Asp Val Ser Lys Glu Glu Val
 180 185 190
 Leu Ser Ser Arg Met Thr Ile Pro Gly Arg Ile Val Gly Thr Pro Asp
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 Tyr Met Ala Pro Glu Arg Leu Leu Gly His Pro Ala Ser Lys Ser Thr
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 Asp Ile Tyr Ala Leu Gly Val Val Leu Tyr Gln Met Leu Thr Leu Ser
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 Phe Pro Tyr Arg Arg Lys Lys Gly Lys Lys Ile Val Leu Asp Gly Gln
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 Arg Ile Pro Ser Pro Gln Glu Val Ala Pro Tyr Arg Glu Ile Pro Pro
 260 265 270
 Phe Leu Ser Ala Val Val Met Arg Met Leu Ala Val Asp Pro Gln Glu
 275 280 285
 Arg Tyr Ser Ser Val Thr Glu Leu Lys Glu Asp Ile Glu Ser His Leu
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 Lys Gly Ser Pro Lys Trp Thr Leu Thr Thr Ala Leu Pro Pro Lys Lys
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 Ser Ser Ser Trp Lys Leu Asn Glu Pro Ile Leu Leu Ser Lys Tyr Phe
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 Pro Met Leu Glu Val Ser Pro Ala Ser Trp Tyr Ser Leu Ala Ile Ser
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 Asn Ile Glu Ser Phe Ser Glu Met Arg Leu Glu Tyr Thr Leu Ser Lys
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 Lys Gly Leu Asn Glu Gly Phe Gly Ile Leu Leu Pro Thr Ser Glu Asn
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 Ala Leu Gly Gly Asp Phe Tyr Gln Gly Tyr Gly Phe Trp Leu His Ile
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 Lys Glu Arg Thr Leu Ser Val Ser Leu Val Lys Asn Ser Leu Glu Ile
 405 410 415
 Gln Arg Cys Ser Gln Asp Leu Glu Ser Asp Lys Glu Thr Phe Leu Ile
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 Ala Leu Glu Gln His Asn His Ser Leu Ser Leu Phe Val Asp Gly Thr
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 Thr Trp Leu Ile His Met Asn Tyr Leu Pro Ser Arg Ser Gly Arg Val
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 Ala Ile Ile Val Arg Asp Met Glu Asp Ile Leu Glu Asp Ile Gly Ile
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 Phe Glu Ser Ser Gly Ser Leu Arg Val Ser Cys Leu Ala Val Pro Asp
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 Ala Phe Leu Ala Glu Lys Leu Tyr Asp Arg Ala Leu Val Leu Tyr Arg
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Gly Val Ala Ala P Leu Glu Tyr Leu Gly Lys Ala Le Val Tyr Gln
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 Lys Arg Tyr Ser Gln His Pro Glu Ile Phe Arg Leu Lys Asp His Val
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 Val Tyr Arg Leu His Glu Ser Phe Tyr Lys Arg Asp Arg Leu Ala Leu
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 Val Phe Met Ile Leu Val Leu Glu Ile Ala Pro Gln Ala Ile Thr Pro
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 Gly Gln Glu Glu Lys Ile Leu Val Trp Leu Lys Asp Lys Ser Arg Ala
 645 650 655
 Thr Leu Phe Cys Leu Leu Asp Pro Thr Val Leu Glu Leu Arg Ser Ser
 660 665 670
 Lys Met Glu Leu Phe Leu Ser Tyr Trp Ser Gly Phe Ile Pro His Leu
 675 680 685
 Asn Ser Leu Phe His Arg Ala Trp Asp Gln Ser Asp Val Arg Ala Leu
 690 695 700
 Ile Glu Ile Phe Tyr Val Ala Cys Asp Leu His Lys Trp Gln Phe Leu
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 Ser Ser Cys Ile Asp Ile Phe Lys Glu Ser Leu Glu Asp Gln Lys Ala
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 Thr Glu Glu Ile Val Glu Phe Ser Phe Glu Asp Leu Gly Ala Phe Leu
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 Phe Ala Ile Gln Ser Ile Phe Asn Lys Glu Asp Ala Glu Lys Ile Phe
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 Val Ser Asn Asp Gln Leu Ser Pro Ile Leu Leu Val Tyr Ile Phe Asp
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 Asp Tyr Leu Arg Asn His Glu Ile Arg Ala His Leu Trp Cys Arg Asn
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 Glu Lys Ala Leu Ser Thr Ile Phe Glu Asn Tyr Thr Glu Lys Gln Leu
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 Lys Asp Glu Gln His Glu Leu Phe Val Leu Tyr Gly Cys Tyr Leu Ala
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 Leu Ile Gln Gly Ala Glu Ala Ala Lys Gln His Phe Asp Val Cys Arg
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 Leu Gly Leu Pro Lys Asp Ala Leu Ser Tyr Gln Glu Arg Arg Leu Leu
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 Leu Arg Gln Lys Phe Leu Tyr Phe His Cys Leu Gly Asn His Asp Glu
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Leu

945

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<211>1826

<212>PRT

<213>Chlamydia pneumoniae

<400>113

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 Gly Val Ser Gly Ser Gly Lys Ser Ser Ile Ala Phe Asp Thr Leu Tyr
 35 40 45
 Ala Ala Gly Arg Lys Arg Tyr Ile Ser Thr Leu Pro Thr Phe Phe Ala
 50 55 60
 Thr Thr Ile Thr Thr Leu Pro Asn Pro Lys Val Glu Glu Ile His Gly

65										75					80
Leu	Ser	Pro	Thr	Ile	Ala	Ile	Lys	Gln	Asn	His	Phe	Ser	His	Tyr	Ser
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His	Ala	Thr	Val	Gly	Ser	Thr	Thr	Glu	Leu	Phe	Ser	His	Leu	Ala	Leu
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Leu	Asp	Leu	Tyr	Ser	Lys	Glu	Lys	Val	Leu	Ser	Thr	Ile	Met	Glu	Leu
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Ser	Glu	Gly	Val	Gln	Ile	Ser	Ile	Leu	Ala	Pro	Leu	Leu	Arg	Lys	Asp
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Ile	Ala	Ala	Ile	His	Glu	Tyr	Ala	Gln	Gln	Gly	Phe	Thr	Lys	Val	Arg
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Cys	Asn	Gly	Thr	Ile	His	Pro	Ile	Tyr	Ser	Phe	Leu	Thr	Ser	Gly	Ile
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Pro	Glu	Asp	Cys	Ser	Val	Asp	Ile	Val	Ile	Asp	Thr	Leu	Ile	Lys	Ser
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Glu	Asn	Asn	Ile	Ala	Arg	Leu	Lys	Val	Ser	Leu	Phe	Thr	Ala	Leu	Glu
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Phe	Gly	Glu	Gly	His	Cys	Ser	Val	Leu	Ser	Asp	Glu	Glu	Leu	Met	Thr
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Phe	Ser	Thr	Lys	Gln	Ile	Asp	Asp	Val	Thr	Tyr	Thr	Pro	Leu	Thr	
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Gly	Val	Leu	Asn	Asp	Ile	Gly	Asp	Lys	Val	Arg	Tyr	Thr	Thr	Lys	Pro
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Ser	Arg	Tyr	Leu	Ser	Lys	Gly	Met	Ser	Ala	His	Ser	Cys	Ser	Leu	Cys
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Lys	Gly	Thr	Gly	Leu	Gly	Asp	Tyr	Ala	Ser	Val	Ala	Thr	Trp	Glu	Gly
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Lys	Thr	Phe	Thr	Glu	Phe	Gln	Gln	Met	Ser	Leu	Asn	Asn	Trp	His	Val
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Gln	Gly	Leu	Lys	Gln	Arg	Leu	Ser	Phe	Leu	Ile	Asp	Leu	Gly	Leu	Gly
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Tyr	Leu	Thr	Pro	Asn	Arg	Ala	Leu	Ala	Thr	Leu	Ser	Gly	Gly	Glu	Gln
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Glu	Arg	Thr	Ala	Ile	Ala	Lys	His	Leu	Gly	Gly	Glu	Leu	Phe	Gly	Ile
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Thr	Tyr	Ile	Leu	Asp	Glu	Pro	Ser	Ile	Gly	Leu	His	Pro	Gln	Asp	Thr
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Val	Ile	Leu	Val	Glu	His	Glu	Glu	Arg	Met	Ile	Ser	Leu	Ala	Asp	Arg
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Ile	Ile	Asp	Ile	Gly	Pro	Gly	Ala	Gly	Ile	Phe	Gly	Gly	Glu	Val	Leu
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Phe	Asn	Gly	Lys	Pro	Glu	Asp	Phe	Leu	Met	Asn	Ser	Ser	Ser	Leu	Thr
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Ala	Lys	Tyr	Leu	Arg	Gln	Glu	Leu	Thr	Ile	Pro	Ile	Pro	Glu	Ser	Arg

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Asp	Glu	Arg	Leu	Pro	Leu	Asn	Leu	Ile	Glu	Pro	Ala	Ile	Val	Ile	Gln	
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His	Thr	Lys	Val	Ser	Pro	Lys	Asn	Ser	Ser	Ser	Leu	Leu	Ser	Ala	Ile	
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Gly	Arg	Leu	Tyr	Pro	Glu	Ile	Thr	His	Gln	Leu	Leu	Xaa	Ser	Asp	His	
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Pro	Glu	Gly	Arg	Cys	Leu	Thr	Cys	Gly	Gly	Arg	Gly	Glu	Ile	Leu	Lys	
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Ile	Ser	Leu	Glu	Glu	His	Lys	Glu	Lys	Ile	Ala	His	Tyr	Thr	Pro	Leu	
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Glu	Phe	Phe	Ser	Leu	Phe	Phe	Pro	Lys	Ser	Tyr	Met	Lys	Pro	Val	Gln	
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Lys	Leu	Leu	Lys	Asp	Glu	Asn	Ala	Ser	Gln	Pro	Leu	Lys	Leu	Leu	Thr	
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Met	Asn	Ala	Leu	Leu	Met	Glu	Gln	Leu	Asp	Thr	Glu	Ser	Asp	Ser	Pro	
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Leu	Ile	Lys	Pro	Leu	Leu	Ala	Leu	Thr	Ser	Cys	Pro	Ala	Cys	Lys	Gly	
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Ser	Gly	Leu	Asn	Asp	Tyr	Ala	Asn	Tyr	Val	Arg	Ile	Asn	Asn	Thr	Ser	
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Asn	Thr	Ile	Gly	Thr	Asp	Asp	Thr	Arg	Ser	Ile	Ile	Gln	Asp	Leu	Met	
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Gly	Gln	Arg	Gln	Asp	Thr	Leu	Ser	Asp	Gly	Glu	Asn	Tyr	Arg	Leu	His	
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Leu	Ala	Lys	Lys	Ile	Ser	Ile	Asn	Leu	Thr	Asn	Ile	Val	Tyr	Leu	Phe	
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Gln	Leu	Leu	Lys	Glu	Leu	Val	Ala	Asn	Asn	Asn	Thr	Val	Ile	Ala	Thr	
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Asp	Arg	Ser	Cys	Ser	Leu	Ile	Pro	His	Ala	Asp	His	Ala	Ile	Phe	Leu	
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Gly	Pro	Gly	Ser	Gly	Pro	Gln	Gly	Gly	Phe	Leu	Met	Asp	Ser	Asp	Thr	
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Glu	Val	Cys	Pro	Ser	Val	Asp	Leu	His	Ala	Asn	Val	Pro	Gln	Thr	Glu	
1475							1480					1485				
Val	Cys	Pro	Lys	Ala	Pro	Leu	Ser	Ile	Ser	Lys	Ala	Asn	His	Thr	Arg	
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Asn	Leu	Lys	Val	Ser	Ala	Pro	Leu	His	Ala	Leu	Val	Ala	Ile	Gly	Gly	
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Val	Ser	Gly	Ser	Gly	Lys	Thr	Ser	Leu	Leu	Glu	Gly	Phe	Lys	Lys		
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Gln	Ala	Glu	Leu	Ile	Ala	Lys	Gly	Thr	Thr	Thr	Phe	Ser	Asp	Leu		
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Val	Val	Ile	Asp	Ser	His	Pro	Ile	Ala	Ser	Ser	Gln	Arg	Ser	Asp	Ile	
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Ser	Thr	Tyr	Phe	Asp	Ile	Ala	Pro	Ser	Leu	Arg	Ala	Phe	Tyr	Ala	Ser	
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 Asn Thr Lys Gln Gly Gln Cys Ser Asp Cys Gln Gly Leu Gly Tyr Gln
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 Trp Ile Asp Arg Ala Phe Tyr Ala Leu Glu Lys Arg Pro Cys Pro Thr
 1635 1640 1645
 Cys Ser Gly Phe Arg Ile Gln Pro Leu Ala Gln Glu Val Leu Tyr Glu
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 Gly Lys His Phe Gly Glu Leu Leu His Thr Pro Ile Glu Thr Val Ala
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 Leu Arg Phe Pro Phe Ile Lys Lys Ile Gln Lys Pro Leu Lys Ala Leu
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 Leu Asp Ile Gly Leu Gly Tyr Leu Pro Ile Gly Gln Lys Leu Ser Ser
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 Leu Ser Val Ser Glu Lys Thr Ala Leu Lys Thr Ala Tyr Phe Leu Tyr
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 Gln Thr Pro Glu Thr Pro Thr Leu Phe Leu Ile Asp Glu Leu Phe Ser
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 Ser Leu Asp Pro Ile Lys Lys Gln His Leu Pro Glu Lys Leu Arg Ser
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 Leu Ile Asn Ser Gly His Ser Val Ile Tyr Ile Asp His Asp Val Lys
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 Leu Leu Lys Ser Ala Asp Tyr Leu Ile Glu Ile Gly Pro Gly Ser Gly
 1780 1785 1790
 Lys Gln Gly Gly Lys Leu Leu Phe Ser Gly Ser Pro Lys Asp Ile Tyr
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Asp Ser

1825

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<211>486

<212>PRT

<213>Chlamydia pneumoniae

<400>114

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 35 40 45
 Ala Ile Gly Phe Leu Lys Glu Leu Arg Glu Gln Lys Arg Val Pro Leu
 50 55 60
 Ala Ile Met Leu Asp Thr Lys Gly Pro Glu Ile Arg Leu Gly Asn Ile
 65 70 75 80
 Pro Gln Pro Ile Ser Val Ser Gln Gly Gln Lys Leu Arg Leu Val Ser
 85 90 95
 Ser Asp Ile Asp Gly Ser Ala Glu Gly Val Ser Leu Tyr Pro Lys
 100 105 110
 Gly Ile Phe Pro Phe Val Pro Glu Gly Ala Asp Val Leu Ile Asp Asp
 115 120 125
 Gly Tyr Ile His Ala Val Val Val Ser Ser Glu Ala Asp Ser Leu Glu
 130 135 140
 Leu Glu Phe Met Asn Ser Gly Leu Leu Lys Ser His Lys Ser Leu Ser
 145 150 155 160
 Ile Arg Gly Val Asp Val Ala Leu Pro Phe Met Thr Glu Lys Asp Ile
 165 170 175
 Ala Asp Leu Lys Phe Gly Val Glu Gln Asn Met Asp Val Val Ala Ala
 180 185 190
 Ser Phe Val Arg Tyr Gly Glu Asp Ile Glu Thr Met Arg Lys Cys Leu
 195 200 205
 Ala Asp Leu Gly Asn Pro Lys Met Pro Ile Ile Ala Lys Ile Glu Asn
 210 215 220
 Arg Leu Gly Val Glu Asn Phe Ser Lys Ile Ala Lys Leu Ala Asp Gly
 225 230 235 240

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Ile Met Ile Ala Arg C Asp Leu Gly Ile Glu Leu Ser Val Val Glu
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      260      265      270
His Phe Cys Val Thr Ala Thr Gln Met Leu Glu Ser Met Ile Arg Asn
      275      280      285
Val Leu Pro Thr Arg Ala Glu Val Ser Asp Ile Ala Asn Ala Ile Tyr
      290      295      300
Asp Gly Ser Ser Ala Val Met Leu Ser Gly Glu Thr Ala Ser Gly Ala
305      310      315      320
His Pro Val Ala Ala Val Lys Ile Met Arg Ser Val Ile Leu Glu Thr
      325      330      335
Glu Lys Asn Leu Ser His Asp Ser Phe Leu Lys Leu Asp Glu Ser Asn
      340      345      350
Ser Ala Leu Gln Val Ser Pro Tyr Leu Ser Ala Ile Gly Leu Ala Gly
      355      360      365
Ile Gln Ile Ala Glu Arg Ala Asp Ala Lys Ala Leu Ile Val Tyr Thr
      370      375      380
Glu Ser Gly Ser Ser Pro Met Phe Leu Ser Lys Tyr Arg Pro Lys Phe
385      390      395      400
Pro Ile Ile Ala Val Thr Pro Ser Thr Ser Val Tyr Tyr Arg Leu Ala
      405      410      415
Leu Glu Trp Gly Val Tyr Pro Met Leu Thr Gln Glu Ser Asp Arg Ala
      420      425      430
Val Trp Arg His Gln Ala Cys Ile Tyr Gly Ile Glu Gln Gly Ile Leu
      435      440      445
Ser Asn Tyr Asp Arg Ile Leu Val Leu Ser Arg Gly Ala Cys Met Glu
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Glu Thr Asn Asn Leu Thr Leu Thr Ile Val Asn Asp Ile Leu Thr Gly
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Ser Glu Phe Pro Glu Thr
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<211>463

<212>PRT

<213>Chlamydia pneumoniae

<400>115

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Pro Arg Ser Phe Leu Thr Gly Leu Gly Lys Gly Phe Gly Phe Leu Ala
      35      40      45
Phe Tyr Ile Ile Ser Asp Tyr Arg Lys Thr Ala Leu Thr Asn Leu Ala
      50      55      60
Leu Ala Phe Pro Glu Lys Thr Phe Asp Glu Arg Tyr Lys Ile Ala Arg
      65      70      75      80
Gln Ser Leu Gln His Leu Ile Ile Thr Leu Leu Glu Leu Leu Ala Ile
      85      90      95
Glu Gln Leu Val Gly Asn Ile Asp Lys Leu Ile Thr Ile Val Thr Ser
      100      105      110
Ser Arg Asn Pro Lys Gly Phe Ser Ser Glu Glu Val Ile Ser Asn Glu
      115      120      125
Asp Leu Glu Glu Thr Phe Lys Asn Leu Gln Glu Lys Gln Gly Leu Ile
      130      135      140
Leu Phe Cys Gly His Gln Ala Asn Trp Glu Leu Pro Phe Leu Tyr Ile
145      150      155      160
Thr Lys Asn Tyr Pro Gly Ile Ala Phe Ala Lys Ala Ile Lys Asn Gln
      165      170      175
Arg Leu Ser Lys Lys Ile Phe Ala Leu Arg Glu Val Phe Lys Gly Lys
      180      185      190
Ile Val Pro Pro Lys Asn Gly Ile Gln Gln Gly Ile Glu Ala Leu Asn
      195      200      205
Gln Gly Lys Leu Val Gly Ile Val Gly Asp Gln Ala Leu Leu Met Ser

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210 215 220
 Ser Tyr Thr Tyr Pro Leu Phe Gly Ser Pro Ala Phe Thr Thr Thr Ser
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 Pro Ala Leu Leu Ala Tyr Lys Thr Gly Phe Pro Val Ile Ala Val Asn
 245 250 255
 Val Ser Arg Gln Ala Lys Gly Phe Glu Val Ile Pro Ser Ala Lys Leu
 260 265 270
 Tyr Ala Asn Lys Ser Leu Pro Met Lys Glu Ser Val Ala Ile Leu Met
 275 280 285
 Asp Gln Met Met Gly Phe Leu Glu Lys Gly Ile Ala Ser Gln Pro Glu
 290 295 300
 Gln Trp Met Trp Ile His Lys Arg Trp Lys Arg Lys Ile Ser Asn Val
 305 310 315 320
 Ile Lys Lys Lys Tyr Arg Tyr Ser His Ile Leu Val Phe Val Asp Gln
 325 330 335
 Val Ser Ser His Phe Ser Phe Leu Lys Ala Leu Ala Glu Cys Phe Ser
 340 345 350
 Gly Thr Thr Leu His Leu Thr Leu Gly Asn Ala Asp His Leu Glu Glu
 355 360 365
 Leu Gln Glu Gln Phe Pro Glu Tyr Ser Leu Ile Gln Leu Arg Asn Asp
 370 375 380
 Gln Asp Ile Leu Ala Leu Pro Asn Cys Tyr Pro Ala Ile Phe Asp Leu
 385 390 395 400
 Thr Asn Asn Leu Gln His Leu Tyr Lys His Phe Arg Lys Thr Gly Ser
 405 410 415
 Cys Ala Val Tyr Ser Lys Arg Phe Leu Glu Lys Ser Leu Asp His Pro
 420 425 430
 Gln Ala Pro Leu Lys Asn Ser Leu Arg Ile Phe Tyr Ser Lys Asn Leu
 435 440 445
 Lys Asp Lys Glu Arg Lys Asn Phe Lys Val Lys Ser Lys Gly Pro
 450 455 460

<210>116

<211>114

<212>PRT

<213>Chlamydia pneumoniae

<400>116

Ile Ile Leu Leu Cys Phe Leu Leu Ser Gln Asp Phe Ser Phe Cys Ser
 1 5 10 15
 Glu Asp Ala Pro Glu Arg Asn Met Leu Asn Ser Ile Val Thr Lys Arg
 20 25 30
 Thr Arg Thr Ala Ala Thr Leu Leu Ile Pro Lys Val Ile Pro Glu Ala
 35 40 45
 Pro Ser Thr Pro Val Gln Ile Lys Met Ile Ser Ile Lys Glu Thr Ile
 50 55 60
 Ala Val Arg Ala Lys Ser Pro Ala Asp Thr Val Ala Thr Phe Ala Leu
 65 70 75 80
 Asp Ser Glu Leu Ser Glu Gln Gln Gln Thr Val Leu Ile Ala Ala Ser
 85 90 95
 Lys Pro Trp Pro Lys Gln Ser Ile Lys His Ile Lys Phe Pro Leu Thr
 100 105 110
 Lys Phe

<210>117

<211>104

<212>PRT

<213>Chlamydia pneumoniae

<400>117

Asn Leu Val Arg Gly Asn Phe Met Cys Leu Ile Asp Cys Leu Gly Gln
 1 5 10 15
 Gly Phe Glu Ala Ala Ile Asn Thr Val Cys Cys Cys Ser Asp Ser Ser
 20 25 30
 Glu Ser Lys Ala Asn Val Ala Thr Val Ser Ala Gly Leu Leu Ala Leu
 35 40 45
 Thr Ala Ile Val Ser Phe Ile Leu Ile Ile Leu Ile Cys Thr Gly Val

50 55 60
 Leu Gly Ala Ser Gly Met Thr Phe Gly Met Ser Asn Val Ala Ala Val
 65 70 75 80
 Leu Val Leu Leu Val Thr Ile Leu Leu Ser Met Phe Leu Ser Gly Ala
 85 90 95
 Ser Ser Leu Gln Asn Glu Lys Ser
 100
 <210>118
 <211>434
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>118
 Arg Thr Gln Lys Lys Thr Phe Ile Leu Leu Asp Leu Glu Thr Met Ile
 1 5 10 15
 Lys Phe Leu Ser Gln Leu Phe Ile Arg His Trp Pro Arg Lys Val Val
 20 25 30
 Ser Leu Gly Phe Ala Ile Ile Ile Trp Ile Leu Val Gly Gln Ser Val
 35 40 45
 Thr Ile Thr Arg Thr Leu Thr Asn Val Pro Val Arg Ile Val Asp Leu
 50 55 60
 His Pro Asp Gln Thr Val Leu Gly Leu Gln Lys Ser Gly Phe Leu Asn
 65 70 75 80
 Lys Lys Val Ser Leu Thr Ile Thr Gly Asn Lys Asn Thr Val Gln Asp
 85 90 95
 Leu Arg Pro Ser Asn Leu Glu Val Val Ile Ser Ala Ala Asn His Thr
 100 105 110
 Glu Ser Trp Ile Ala Thr Ile Asp Lys His Asn Leu Val Ser Val Asp
 115 120 125
 His Glu Ile Asn Ile Arg Lys Asp Ile His Ser Val Asp Ala Asn Asp
 130 135 140
 Ile Phe Val Arg Leu Thr Gln Tyr Val Thr Glu Asp Ile Leu Leu Thr
 145 150 155 160
 Ile Thr Lys Pro Ile Gly Ser Pro Pro Lys Gly Tyr Glu Tyr Leu Asp
 165 170 175
 Val Trp Pro Lys Tyr Leu Asn Gln Lys Val Ser Gly Pro Lys Glu Tyr
 180 185 190
 Ile Asn Ala Leu Lys Glu Gln Gly Leu Glu Leu Thr Phe Asn Leu Asn
 195 200 205
 Lys Ile Ser Phe Glu Glu Leu Glu Arg Asn Arg Ile Ala Gln Gly Ser
 210 215 220
 His Asp Glu Ile Ile Phe Pro Ile Pro Lys Glu Trp Lys Lys Ile Leu
 225 230 235 240
 Ile Pro Phe Glu Asn Thr Phe Met Asp Leu Asn Asp Pro Gln Ala Asp
 245 250 255
 Phe Leu Arg Leu Leu Phe Leu Lys Arg Glu Cys Ile Pro Leu Asn Leu
 260 265 270
 Asn Leu Pro Val Phe Leu Phe Phe Pro Val Thr Phe Ile Gln Thr Met
 275 280 285
 Asn Pro Leu Glu Tyr Ser Leu Asp Pro Val Pro Pro Ile Ile Leu Asn
 290 295 300
 His Gly Ile His Gln Ile Asn Ile Pro Leu Tyr Val Lys Asp Val Ser
 305 310 315 320
 Arg Gln Phe Leu Asp Val Val Lys Asn Asn Met Val Leu Thr Ile Val
 325 330 335
 Met Pro Ser Pro Gln Asp Pro Ser Ser Ile Asn Trp Ala Ile Glu Phe
 340 345 350
 Leu Asp Glu Lys Thr Leu Glu Asn Thr Phe Leu Gln Thr Ile Ile Ala
 355 360 365
 Gln Glu His Gly Ile Leu His Asp Ile Ala Leu Ile Asp Glu Ala Gly
 370 375 380
 Ile Arg His Arg Phe Arg Glu Tyr Leu Arg Lys Leu Ala Leu Phe Thr
 385 390 395 400
 Ala Asp Gly Glu Pro Leu Asn Leu Ile Ala Glu Ile Lys Asn Asn Lys
 405 410 415

Val Val Ile Gln Lys Thr Lys Glu Thr Thr Lys Leu Tyr Lys Lys
 420 425 430

Glu Trp

<210>119

<211>279

<212>PRT

<213>Chlamydia pneumoniae

<400>119

Leu Cys Asn Phe Ser Gln Tyr Thr Thr Gln Gly Pro Ser Lys Thr Met
 1 5 10 15
 Pro Phe Asp Ile Thr Tyr Tyr Thr Thr Pro Leu Leu Glu Ile Ile Leu
 20 25 30
 Ile Trp Val Met Leu Asn Tyr Leu Leu Lys Phe Phe Trp Gly Thr Arg
 35 40 45
 Ala Met Asp Val Val Phe Gly Leu Leu Ala Phe Leu Phe Leu Phe Val
 50 55 60
 Leu Ala Asp Lys Leu His Leu Pro Ile Ile Arg Arg Leu Met Leu His
 65 70 75 80
 Val Val Asn Ile Ala Ala Ile Val Val Phe Ile Ile Phe Gln Pro Glu
 85 90 95
 Ile Arg Leu Ala Leu Ser Arg Ile Arg Phe His Gly Lys Lys Phe Phe
 100 105 110
 Ile Asp Thr Gln Glu Gln Phe Val Glu Gln Leu Ala Ala Ser Ile Tyr
 115 120 125
 Gln Leu Ser Glu Arg Gln Ile Gly Ala Leu Val Val Leu Glu Asn Lys
 130 135 140
 Asp Ser Phe Asp Glu Tyr Leu Ser Phe Ser Ser Val Lys Ile Asn Ala
 145 150 155 160
 Thr Phe Ser Glu Glu Leu Leu Glu Thr Ile Phe Glu Pro Ser Ser Pro
 165 170 175
 Leu His Asp Gly Ala Val Ile Leu Arg Gly Asp Ile Leu Ala Tyr Ala
 180 185 190
 Arg Val Val Leu Pro Leu Ala His Asp Thr Thr Gln Leu Ser Arg Ser
 195 200 205
 Met Gly Thr Arg His Arg Ala Ala Leu Gly Ala Ser Gln Arg Ser Asp
 210 215 220
 Ala Leu Ile Ile Thr Val Ser Glu Glu Asn Gly Ser Val Ser Leu Ser
 225 230 235 240
 Arg Asp Gly Leu Leu Thr Arg Gly Val Lys Ile Asp Arg Phe Lys Ala
 245 250 255
 Val Leu Arg Ser Ile Leu Ser Pro Lys Glu His Lys Arg Lys Pro Leu
 260 265 270
 Phe Ser Trp Ile Trp Lys Arg
 275

<210>120

<211>448

<212>PRT

<213>Chlamydia pneumoniae

<400>120

Met Asp Ala Leu Ile Leu Ser Arg Ile Gln Phe Gly Leu Phe Ile Thr
 1 5 10 15
 Phe His Tyr Leu Phe Val Pro Leu Ser Met Gly Leu Ser Met Met Leu
 20 25 30
 Val Ile Met Glu Gly Leu Tyr Leu Val Thr Lys Lys Gln Ile Tyr Lys
 35 40 45
 Gln Met Thr Trp Phe Trp Val Gly Ile Phe Ala Leu Thr Phe Val Leu
 50 55 60
 Gly Val Val Thr Gly Ile Met Gln Ile Phe Ser Phe Gly Ser Asn Trp
 65 70 75 80
 Ala Asn Phe Ser Glu Tyr Thr Gly Asn Ile Phe Gly Thr Leu Leu Gly
 85 90 95
 Ser Glu Gly Val Phe Ala Phe Phe Leu Glu Ser Gly Phe Leu Gly Ile
 100 105 110

Leu Leu Phe Gly Arg Lys Val Ser Lys Lys Met His Phe Ser
 115 120 125
 Thr Cys Met Val Ala Leu Gly Ala His Met Ser Ala Phe Trp Ile Ile
 130 135 140
 Cys Ala Asn Ser Trp Met Gln Thr Pro Ser Gly Tyr Glu Met Val Met
 145 150 155 160
 His Lys Gly Lys Leu Ile Pro Ala Leu Thr Ser Phe Trp Gly Val Val
 165 170 175
 Phe Ser Pro Thr Thr Ile Asp Arg Phe Ile His Ala Val Leu Gly Thr
 180 185 190
 Trp Leu Ser Gly Val Phe Leu Val Ile Ser Val Ser Ala Tyr Tyr Leu
 195 200 205
 Trp Lys Lys Arg His His Glu Phe Ala Lys Gln Gly Met Lys Ile Gly
 210 215 220
 Thr Ile Cys Ala Val Ile Val Leu Val Leu Gln Leu Trp Ser Ala Asp
 225 230 235 240
 Val Thr Ala Arg Gly Val Ala Lys Asn Gln Pro Ala Lys Leu Ala Ala
 245 250 255
 Phe Glu Gly Ile Phe Lys Thr Glu Glu Tyr Thr Pro Ile Trp Ala Phe
 260 265 270
 Gly Tyr Val Asp Met Glu Lys Glu Arg Val Ile Gly Leu Pro Ile Pro
 275 280 285
 Gly Ala Leu Ser Phe Leu Val His Arg Asn Ile Lys Thr Pro Val Thr
 290 295 300
 Gly Leu Asp Gln Ile Pro Arg Asp Glu Trp Pro Asn Val Gln Ala Val
 305 310 315 320
 Phe Gln Leu Tyr His Leu Met Ile Met Leu Trp Gly Val Met Val Ala
 325 330 335
 Leu Thr Leu Ile Ser Trp Ser Ala Tyr Lys Gly Trp Arg Trp Ala Leu
 340 345 350
 Lys Pro Phe Phe Leu Val Ile Leu Thr Phe Ser Val Leu Leu Pro Glu
 355 360 365
 Ile Cys Asn Glu Cys Gly Trp Cys Ala Ala Glu Met Gly Arg Gln Pro
 370 375 380
 Trp Val Val Gln Gly Leu Leu Lys Thr Lys Asp Ala Val Ser Pro Ile
 385 390 395 400
 Val Gln Ala Asn Lys Ile Val Gln Ser Leu Val Ile Phe Ser Leu Val
 405 410 415
 Phe Ile Ala Leu Leu Thr Leu Phe Ile Thr Val Leu Cys Lys Lys Ile
 420 425 430
 Lys His Gly Pro Glu Glu Glu Asn Asp Leu Thr Glu Phe Glu Val Lys
 435 440 445

<210>121

<211>268

<212>PRT

<213>Chlamydia pneumoniae

<400>121

Met Glu Leu Ser Leu Thr Ser Leu Leu Pro Leu Ala Trp Tyr Val Ile
 1 5 10 15
 Leu Gly Val Ala Val Phe Ala Tyr Ser Phe Gly Asp Gly Phe Asp Leu
 20 25 30
 Gly Leu Gly Ala Val Tyr Leu Lys Ala Lys Glu Asp Lys Glu Arg Arg
 35 40 45
 Ile Leu Leu Asn Ser Ile Gly Pro Val Trp Asp Gly Asn Glu Val Trp
 50 55 60
 Leu Val Ile Ile Val Gly Gly Leu Phe Ala Gly Phe Pro Ala Cys Tyr
 65 70 75 80
 Ala Thr Leu Leu Ser Ile Phe Tyr Met Pro Ile Trp Thr Leu Val Leu
 85 90 95
 Leu Tyr Ile Phe Arg Gly Cys Ser Leu Glu Phe Arg Ser Lys Ser Glu
 100 105 110
 Ser Val Ser Trp Lys Ile Phe Trp Asp Ile Ile Phe Ile Cys Ser Gly
 115 120 125
 Thr Ala Ile Ser Phe Phe Leu Gly Thr Ile Val Gly Asn Leu Ile Leu

130		135		140
Gly Leu Pro Leu Ser	Pro Asp Thr Ser Tyr	Ala Ser Leu Ser Trp Ile		
145	150	155	160	
Leu Phe Phe Arg Pro Tyr	Ala Ala Leu Cys Gly	Ala Val Val Ala Ser		
	165	170	175	
Ala Phe Ala Thr His	Gly Ser Phe Phe	Ala Leu Met Lys Thr	Ser Asp	
	180	185	190	
Ser Leu Asn Ala Arg Ile	Ala Gln Gln Phe	Pro Tyr Ile Leu	Ser Ser	
	195	200	205	
Phe Leu Val Phe Tyr Val	Leu Phe Leu Gly	Ala Ser Leu	Ile Ser Ile	
	210	215	220	
Pro Lys Arg Phe Asp	Ala Phe Pro Thr Tyr	Pro Leu Leu	Ile Leu Leu	
225	230	235	240	
Ile Ala Leu Thr Ser	Cys Cys Cys Val	Ala Ala Lys Thr	Ser Val Ser	
	245	250	255	
Lys Lys His Tyr Gly	Thr His Leu Phe	Ile Leu His		
	260	265		

<210>122

<211>403

<212>PRT

<213>Chlamydia pneumoniae

<400>122

Glu Lys Ser Met Arg	Met Leu Gln Ile	Ser Met Leu Leu Leu	Ala Leu
1	5	10	15
Gly Thr Ala Ile Asn	Ser Pro Ala Ile	Tyr Ala Ala Asp	Ser Gln Ser
	20	25	30
Val Ser Phe Pro Glu	Gln Leu Pro Ser	Ser Phe Thr Gly	Glu Ile Lys
	35	40	45
Gly Asn His Val Arg	Met Arg Leu Ala	Pro His Thr Asp	Gly Thr Ile
	50	55	60
Ile Arg Glu Phe Ser	Lys Gly Asp Leu	Val Ala Val Ile	Gly Glu Ser
	65	70	75
Lys Asp Tyr Tyr Val	Ile Ser Ala Pro	Pro Gly Ile Thr	Gly Tyr Val
	85	90	95
Phe Arg Ser Phe Val	Leu Asp Asn Val	Val Glu Gly Glu	Gln Val Asn
	100	105	110
Val Arg Leu Glu Pro	Ser Thr Ser Ala	Pro Val Leu Val	Arg Leu Ser
	115	120	125
Arg Gly Thr Gln Ile	Gln Pro Ala Ser	Gln Glu Pro His	Gly Lys Trp
	130	135	140
Leu Glu Val Val Leu	Pro Ser Gln Cys	Val Phe Tyr Val	Ala Lys Asn
145	150	155	160
Phe Val Ala Asn Lys	Gly Pro Ile Glu	Leu Tyr Thr Gln	Arg Glu Gly
	165	170	175
Gln Lys Lys Ile Ala	Met Asp Leu Ile	Asn Ser Ala Leu	Asn Phe Ala
	180	185	190
His Ile Glu Leu Glu	Lys Ser Leu Asn	Glu Ile Asp Leu	Glu Ala Ile
	195	200	205
Tyr Lys Lys Ile Asn	Leu Val Gln Ser	Glu Glu Phe Lys	Asp Val Pro
	210	215	220
Gly Ile Gln Gly Leu	Ile Gln Lys Ala	Leu Glu Glu Ile	Gln Asp Ala
225	230	235	240
Tyr Leu Ser Lys Ser	Leu Glu Ser Gln	Asn Thr Ser Ile	Ala Ser Ser
	245	250	255
Gln Cys Ser Thr Pro	Lys Val Ser Ser	Glu Val Thr Thr	Ser Leu
	260	265	270
Leu Ser Arg His Ile	Arg Lys Gln Thr	Ala Leu Lys Thr	Ala Pro Leu
	275	280	285
Thr Gln Gly Arg Glu	Asn Leu Glu Tyr	Ser Leu Phe Arg	Ile Trp Ala
	290	295	300
Ser Met Gln Gln Gly	Asn Asp His Ser	Glu Ala Leu Thr	Gln Glu Ala
305	310	315	320
Phe Tyr Arg Ala Glu	Gln Lys Lys Lys	Gln Val Leu Ala	Gly Val Leu
	325	330	335

Glu Val Tyr Pro His Val Lys Asn Asn Pro Gly Asp Tyr Leu Leu
 340 345 350
 Lys Ala Gln Glu Asn Thr Ile Ala Phe Leu Tyr Gly Thr Ser Ile Asn
 355 360 365
 Leu Glu Gln Trp Leu Gly Lys Arg Val Thr Val Glu Cys Leu Pro Arg
 370 375 380
 Pro Asn Asn His Phe Ala Phe Pro Ala Tyr Tyr Val Val Gly Ile Lys
 385 390 395 400
 Glu Ala Ser

<210>123

<211>255

<212>PRT

<213>Chlamydia pneumoniae

<400>123

Tyr Val Pro Phe Arg Lys Phe Ser Asn Gln Asn Pro Met Leu Leu Ile
 1 5 10 15
 Tyr Cys Lys Lys Lys Glu Ile His Leu Gln Trp Pro Gln Thr Ala Lys
 20 25 30
 Ile Arg Phe Thr Pro Lys Ile Ala Met Lys Val Lys Ile Asn Asp Gln
 35 40 45
 Leu Ile Cys Ile Pro Pro Phe Ile Ser Ala Arg Trp Ser Gln Ile Ala
 50 55 60
 Phe Ile Glu Ser Gln Glu Gly Glu Asn Lys Asp Gln Gly Thr Leu Arg
 65 70 75 80
 Leu His Leu Ile Asp Gly Lys Ile Ile Ser Ile Pro Asn Leu Asp Gln
 85 90 95
 Ser Ile Ile Asp Ile Ala Phe Gln Glu His Leu Leu Tyr Leu Glu Thr
 100 105 110
 Ser Gln Ser Gly Lys Glu Asp Ser Arg Asp Asp Asp Lys Leu Gly Val
 115 120 125
 Gly Val Leu Met Asn Val Leu Gln Gln Ile Thr Lys Gly Asn Asp Ile
 130 135 140
 Gln Val Leu Pro Lys Asn Leu Ile Ser Pro Leu Phe Ser Gly Thr Asn
 145 150 155 160
 Pro Ile Glu Ala Ile Leu Gln His Thr Pro Glu His Lys Asp His Pro
 165 170 175
 Asp Ala Pro Thr Asp Val Leu Glu Lys Met Ala Asp Val Ile Arg Val
 180 185 190
 Leu Ser Gly Asn Asn Ala Thr Leu Leu Pro Arg Pro Glu Pro His Cys
 195 200 205
 Asn Cys Met His Cys Gln Ile Gly Arg Val Met Asn Glu Glu Asp Thr
 210 215 220
 Leu Ala Val Ser Asp Lys Asp Leu Thr Phe Arg Thr Trp Asp Ile Met
 225 230 235 240
 Gln Ser Gly Asp Lys Val Val Tyr Cys Asn Glu Ser Leu Lys Ser
 245 250 255

<210>124

<211>432

<212>PRT

<213>Chlamydia pneumoniae

<400>124

Val Arg Thr Gln Met Lys Lys Thr Met Val Ile Asp Thr Ser Val Phe
 1 5 10 15
 Ile Tyr Asp Pro Glu Ala Leu Phe Ser Phe Glu Asn Thr Arg Ile Ile
 20 25 30
 Ile Pro Phe Pro Val Ile Glu Glu Leu Glu Ala Phe Gly Lys Phe Arg
 35 40 45
 Asp Glu Ser Ala Lys Asn Ala Ser Arg Ala Leu Ser Asn Ile Arg Leu
 50 55 60
 Leu Leu Glu Asn Ala Lys Thr Lys Val Thr Asp Gly Val Leu Leu Pro
 65 70 75 80
 Ser Gly Ser Glu Leu Arg Ile Glu Val Ala Pro Leu Ser Asn Asp Asp
 85 90 95

Arg Arg Gly Lys Leu Thr Leu Glu Leu Leu Lys Ile Ala Lys
 100 105 110
 Arg Glu Pro Met Val Phe Val Thr Lys Ser Leu Gly Arg Arg Val Arg
 115 120 125
 Ala Glu Ala Leu Gln Ile Glu Ser Arg Asp Tyr Glu Ser Lys Arg Phe
 130 135 140
 Ser Phe Arg Ser Leu Tyr Arg Gly Phe Arg Glu Leu Gln Val Ser Gln
 145 150 155 160
 Glu Asp Ile Glu Asn Phe Tyr Lys Asn Gly Tyr Leu Asp Leu Pro Leu
 165 170 175
 Asp Val Val Ser Ser Pro Asn Glu Tyr Phe Phe Met Ser Ala Gly Glu
 180 185 190
 Asn His Phe Ala Leu Gly Arg Tyr Tyr Val Ser Glu Gly Lys Ile Ile
 195 200 205
 Ala Leu Lys Ala Met Asp Lys Ser Val Trp Gly Ile Lys Pro Leu Asn
 210 215 220
 Thr Glu Gln Arg Cys Ala Leu Asp Leu Leu Leu Arg Asp Asp Val Lys
 225 230 235 240
 Leu Val Thr Leu Ile Gly Gln Ala Gly Ser Gly Lys Thr Ile Leu Ala
 245 250 255
 Leu Ala Ala Ala Met His Lys Val Phe Asp Lys Glu Thr Tyr Asn Lys
 260 265 270
 Val Leu Val Ser Arg Pro Ile Val Pro Met Gly Arg Asp Ile Gly Phe
 275 280 285
 Leu Pro Gly Leu Lys Glu Asp Lys Leu Met His Trp Met Gln Pro Ile
 290 295 300
 Tyr Asp Asn Met Glu Val Leu Phe Ser Ile Asn Gln Met Gly Asn Ser
 305 310 315 320
 Ser Glu Ala Leu Gln Ala Leu Met Asp Ala Lys Lys Leu Glu Met Glu
 325 330 335
 Ala Leu Thr Tyr Ile Arg Gly Arg Ser Leu Pro Lys Ala Phe Ile Ile
 340 345 350
 Ile Asp Glu Ala Gln Asn Leu Thr Pro His Glu Ile Lys Thr Ile Ile
 355 360 365
 Ser Arg Ala Gly Lys Gly Thr Lys Ile Val Leu Thr Gly Asp Pro Thr
 370 375 380
 Gln Ile Asp Ser Leu Tyr Phe Asp Glu Asn Ser Asn Gly Leu Thr Tyr
 385 390 395 400
 Leu Val Gly Lys Phe His His Leu Ala Leu Tyr Gly His Met Phe Met
 405 410 415
 Thr Arg Thr Glu Arg Ser Glu Leu Ala Ala Ala Ala Thr Ile Leu
 420 425 430

<210>125

<211>184

<212>PRT

<213>Chlamydia pneumoniae

<400>125

Asn Asn Glu Ser Arg Trp Gly Gly Tyr Lys Ser Ser Ser Ile Gly Ser
 1 5 10 15
 Ser Gln Cys Arg Phe Leu Gly Leu Ser Gln Arg Pro Leu Asn Pro Glu
 20 25 30
 Arg Gln Gly Thr Pro Leu Asn Glu Gly Glu Cys Arg Ala Gly Met Trp
 35 40 45
 Arg Asn Ala Asp Gly Ser Asn His Thr Gly Lys Gln Gly Lys Pro His
 50 55 60
 Tyr Leu Ala Gln Leu Leu Gly Pro Lys Ala Val Asp His His Asn Lys
 65 70 75 80
 Ser Gln Ala Ala Phe Asp Arg Cys Lys Asn Ala Tyr Leu Asn Cys Phe
 85 90 95
 Ser Leu Ala Gln Thr Leu Gly Val Thr Phe Leu Gln Ile Pro Leu Ile
 100 105 110
 Ser Ser Gly Ile Tyr Ala Pro Pro Glu Asn Arg Lys Lys Pro Asn Ser
 115 120 125
 Glu Glu Asn Lys Val Arg Met Arg Trp Ile His Ala Val Lys Cys Ala

130 135 140
 Leu Val Ala Ala Met Gln Glu Phe Gly Asn Glu Pro Gly Asn Thr Asp
 145 150 155 160
 Arg Arg Met Leu Ile Val Leu Thr Asp Leu Lys Thr Pro Ala Ile Thr
 165 170 175
 Asp Pro Lys Lys Lys Ser His Leu
 180

<210>126

<211>195

<212>PRT

<213>Chlamydia pneumoniae

<400>126

Lys Asn Leu Phe His Tyr Lys Ala Ile Leu Met Ser Ile Phe Asn Glu
 1 5 10 15
 Glu Val Phe Ile Ile Ser His Arg His Thr Pro Leu Gly Gln Thr Ser
 20 25 30
 Thr Ala Leu Arg Asn Thr Pro Leu Val Asn Pro Leu His Arg Thr Asn
 35 40 45
 Leu Gln Arg Ile Ala Ser Tyr Ile Pro Ile Phe Ser Thr Phe Ile Gly
 50 55 60
 Ile Lys Thr Leu Lys Gly Ile Ser Ser Leu Gln Tyr Ser Met Val Leu
 65 70 75 80
 Met Thr Gly Asn Phe Ser Ser Val Cys Lys Thr Leu Pro Cys Pro Glu
 85 90 95
 Ile Tyr Glu Glu Leu Pro Lys Val Arg Lys Glu Ala Trp Leu Glu Ile
 100 105 110
 Phe Gly Ile Lys Ala Leu Tyr Tyr Leu Val Leu Gly Val Ile Lys Ile
 115 120 125
 Ile Lys Leu Ile Val Arg Tyr Leu Cys Pro Cys Cys Arg Pro Pro Glu
 130 135 140
 Pro Arg Glu Pro Gln Asn Pro Leu Thr Pro Thr Pro Leu Asp Met Gly
 145 150 155 160
 Gln Gln Ile Asp Ala Ile Phe Ser Thr Pro Thr Ser Pro Thr Gly Phe
 165 170 175
 Lys Asp Pro Phe Leu Asp Asp Leu Leu Gln Glu Asp Lys Lys Lys Ala
 180 185 190
 Pro His Leu
 195

<210>127

<211>1043

<212>PRT

<213>Chlamydia pneumoniae

<400>127

Met Thr Ala Asp Glu Val Gly Lys Asn Ser Phe Ala Lys Lys Glu Glu
 1 5 10 15
 Gln Val Leu Lys Phe Trp Lys Asp Asn Gln Ile Phe Glu Lys Ser Leu
 20 25 30
 Gln Asn Arg Gln Gly Lys Thr Leu Tyr Ser Phe Tyr Asp Gly Pro Pro
 35 40 45
 Phe Ala Thr Gly Leu Pro His Tyr Gly His Leu Leu Ala Ser Thr Ile
 50 55 60
 Lys Asp Val Val Gly Arg Tyr Ala Thr Met Asp Gly Tyr Tyr Val Pro
 65 70 75 80
 Arg Arg Phe Gly Trp Asp Cys His Gly Val Pro Val Glu Tyr Glu Val
 85 90 95
 Glu Lys Ser Leu Ser Leu Thr Ala Pro Gly Pro Ile Glu Asp Phe Gly
 100 105 110
 Ile Ala Ser Phe Asn Glu Glu Cys Arg Lys Ile Val Phe Arg Tyr Val
 115 120 125
 His Glu Trp Glu Tyr Tyr Ile Asn Arg Ile Gly Arg Trp Val Asp Phe
 130 135 140
 Ser Ser Thr Trp Lys Thr Met Asp Ala Ser Phe Met Glu Ser Val Trp
 145 150 155 160
 Trp Val Phe Gln Ser Leu Tyr Asn Gln Gly Leu Val Tyr Glu Gly Thr

									170						175
Lys	Val	Val	Pro	Phe	Ser	Thr	Ala	Leu	Gly	Thr	Pro	Leu	Ser	Asn	Phe
			180					185					190		
Glu	Ala	Ser	Gln	Asn	Tyr	Lys	Glu	Val	Asp	Asp	Pro	Ser	Leu	Val	Val
		195					200					205			
Arg	Met	Pro	Leu	Gln	Asn	Asp	Ser	Ala	Ser	Leu	Leu	Val	Trp	Thr	Thr
	210					215					220				
Thr	Pro	Trp	Thr	Leu	Pro	Ser	Asn	Met	Ala	Ile	Ala	Val	Gly	Glu	Thr
225					230					235					240
Leu	Val	Tyr	Val	Arg	Ile	Gln	Asp	Lys	Lys	Ser	Gly	Glu	Gln	Trp	Ile
				245					250					255	
Leu	Ser	Gln	Gly	Cys	Val	Ser	Arg	Trp	Phe	Ser	Asn	Pro	Glu	Glu	Phe
			260					265				270			
Val	Ile	Leu	Glu	Ser	Phe	Ser	Gly	Lys	Asp	Leu	Val	Gly	Arg	Thr	Tyr
		275					280					285			
Glu	Pro	Pro	Phe	Thr	Phe	Phe	Gln	Ser	Lys	Arg	Glu	Glu	Gly	Ala	Phe
		290				295					300				
Arg	Val	Ile	Ala	Ala	Ser	Phe	Val	Glu	Glu	Ser	Glu	Gly	Thr	Gly	Val
305					310						315				320
Val	His	Met	Ala	Pro	Ala	Phe	Gly	Glu	Gly	Asp	Phe	Leu	Val	Cys	Lys
				325					330					335	
Glu	Asn	His	Val	Pro	Leu	Val	Cys	Pro	Val	Asp	Ala	His	Gly	Ser	Phe
			340					345					350		
Thr	Glu	Glu	Ile	Pro	Gln	Tyr	Gln	Gly	Gln	Tyr	Ile	Lys	His	Ala	Asp
		355					360					365			
Lys	Glu	Ile	Ile	Lys	Phe	Leu	Lys	Lys	Glu	Gly	Arg	Ile	Phe	Tyr	His
	370					375					380				
Gly	Thr	Val	Lys	His	Arg	Tyr	Pro	Phe	Cys	Trp	Arg	Thr	Asp	Thr	Pro
385					390					395					400
Leu	Ile	Tyr	Lys	Ala	Val	Asn	Ser	Trp	Phe	Val	Ala	Val	Glu	Lys	Ile
				405					410					415	
Lys	Asp	Lys	Met	Leu	Arg	Ala	Asn	Ser	Ser	Ile	His	Trp	Val	Pro	Glu
			420				425					430			
His	Ile	Gln	Glu	Gly	Arg	Phe	Gly	Lys	Trp	Leu	Glu	Gly	Ala	Arg	Asp
		435					440					445			
Trp	Ala	Ile	Ser	Arg	Asn	Arg	Tyr	Trp	Gly	Thr	Pro	Ile	Pro	Ile	Trp
	450					455					460				
Lys	Ser	Ala	Asp	Gly	Glu	Ile	Leu	Val	Val	Gly	Ser	Ile	Arg	Glu	Leu
465					470					475					480
Glu	Glu	Leu	Thr	Gly	Thr	Gln	Ile	Thr	Asp	Ile	His	Arg	His	Phe	Ile
				485					490					495	
Asp	Asp	Leu	Asn	Ile	Val	Lys	Asp	Gly	Lys	Pro	Phe	His	Arg	Ile	Pro
			500					505					510		
Tyr	Val	Phe	Asp	Cys	Trp	Phe	Asp	Ser	Gly	Ala	Met	Pro	Tyr	Ala	Gln
		515					520								

675	680	685
Val Gly Lys Val Arg Glu Ser Met Ser Gln Tyr His Leu Asn Phe Ala		
690	695	700
Val Glu Pro Phe Val Thr Phe Ile Asp Asp Leu Thr Asn Trp Tyr Ile		
705	710	715
Arg Arg Cys Arg Arg Arg Phe Trp Glu Ala Glu Asp Thr Pro Asp Arg		
	725	730
Arg Ala Ala Phe Ser Thr Leu Tyr Glu Val Leu Thr Val Phe Cys Lys		
	740	745
Val Ile Ala Pro Phe Val Pro Phe Leu Ala Glu Asp Ile Tyr Gln Lys		
	755	760
Leu Lys Leu Glu Lys Glu Pro Glu Ser Val His Leu Cys Asp Phe Pro		
	770	775
Gln Val Glu Met Asp Lys Ile Leu Pro Asp Leu Glu Lys Arg Met His		
785	790	795
Asp Ile Arg Glu Ile Val Gly Leu Gly His Ser Leu Arg Lys Glu His		
	805	810
Lys Leu Lys Val Arg Gln Pro Leu Ala Asn Phe Tyr Val Val Gly Ser		
	820	825
Lys Asp Arg Leu Ser Leu Leu Lys Thr Phe Glu Gly Leu Ile Ala Glu		
	835	840
Glu Leu Asn Val Lys Asn Val Ile Phe Tyr Glu Glu Ala Pro Ser Phe		
	850	855
Ile Tyr Thr Thr Val Lys Pro Asn Phe Arg Met Leu Gly Lys Lys Val		
865	870	875
Gly Ser Lys Met Lys Glu Val Gln Lys Ala Leu Ser Glu Leu Pro Asn		
	885	890
Asn Ala Ile Asp Lys Leu Ile Gln Glu Thr Trp Val Leu Thr Ile		
	900	905
Asp Asp Arg Glu Ile Ala Leu Asp Gly Asp Asp Val Val Ile Cys Arg		
	915	920
His Thr Asp Pro Gly Tyr Ile Ala Arg Ser Ser Ala Leu Phe Ser Val		
	930	935
Ile Leu Asp Cys Gln Leu Arg Glu Pro Leu Ile Val Glu Gly Ile Ala		
945	950	955
Arg Glu Leu Val Asn Lys Ile Asn Thr Met Arg Arg Asn Gln Gln Leu		
	965	970
His Val Ser Asp Arg Ile Ala Leu Arg Ile Lys Thr Thr Glu Ala Val		
	980	985
His Arg Ala Phe Leu Asp Tyr Glu Asn Tyr Ile Cys Glu Glu Thr Leu		
	995	1000
Ile Ile Ala Tyr Asp Phe Thr Gln Asp Ser Asp Phe Gln Gly Glu Asn		
	1010	1015
Trp Asp Ile Asn Gly His Ala Thr Gln Ile Glu Ile Thr Val Ser Ser		
1025	1030	1035
Ile Asp Ser		1040

<210>128

<211>636


<212>PRT

<213>Chlamydia pneumoniae

<400>128

Met Lys Gln His Tyr Ser Leu Asn Lys Ser Arg His Ile Leu Arg Ser		
1	5	10
Thr Tyr Lys Lys Leu Lys Ser Lys Lys Leu Ala His Ser Pro Ala Asp		
	20	25
Lys Lys Gln Leu Gln Glu Leu Leu Glu Gln Leu Glu Glu Ala Ile Phe		
	35	40
Glu His Asp Gln Glu Thr Ala Ser Asp Leu Ala Gln Gln Ala Leu Ala		
	50	55
Phe Ser Asn Arg Tyr Pro Asn Ser Phe Gly Arg Lys Thr Tyr Glu Leu		
	65	70
Ile Lys Ala Leu Leu Phe Ala Gly Val Val Ala Phe Leu Val Arg Gln		
	85	90
		95

Phe	Trp	Phe	Glu	I		Yr	Glu	Val	Pro	Thr	Gly	Ser	Me	Arg	Pro	Thr
			100						105						110	
Ile	Leu	Glu	Gln	Asp	Arg	Ile	Leu	Val	Ser	Lys	Thr	Thr	Thr	Phe	Gly	Leu
		115					120						125			
His	Cys	Pro	Phe	Ala	Lys	Lys	Pro	Leu	Ala	Phe	Asn	Pro	Glu	Ser	Val	
	130					135					140					
Thr	Arg	Gly	Gly	Leu	Val	Val	Phe	Thr	Val	Gly	Asp	Leu	Pro	Ile	Pro	
145					150					155					160	
Asp	Ala	Asp	Thr	Lys	Tyr	Phe	Gly	Leu	Ile	Pro	Gly	Lys	Lys	Arg	Tyr	
				165				170						175		
Ile	Lys	Arg	Cys	Met	Gly	Arg	Pro	Gly	Asp	Phe	Leu	Tyr	Phe	Tyr	Gly	
			180					185					190			
Gly	Lys	Ile	Tyr	Gly	Leu	Asp	Asp	Ala	Gly	Lys	Arg	Ile	Glu	Phe	Pro	
		195					200					205				
Ser	Val	His	Gly	Leu	Glu	Asn	Leu	Tyr	His	Val	Pro	Tyr	Ile	Ser	Phe	
	210					215					220					
Asp	Gly	Thr	Thr	Ser	Ser	His	Thr	Glu	Gly	Gln	Lys	Thr	Ile	Ile	Asp	
225					230					235					240	
Phe	Lys	Gln	Phe	Asn	Gln	Ser	Tyr	Gly	Arg	Leu	Ile	Phe	Pro	Gln	Thr	
				245					250					255		
Ser	Met	Tyr	Gly	Gln	Phe	Phe	Asp	His	Lys	Glu	Trp	His	Gln	Asp	Glu	
		260					265						270			
Pro	Asn	Lys	Leu	Lys	Asp	Pro	His	Leu	Ser	Pro	Val	Ser	Tyr	Ala	Asp	
		275					280					285				
Leu	Phe	Gly	Met	Gly	Asn	Tyr	Ala	Met	Val	Arg	Ile	Leu	Thr	Glu	His	
	290				295						300					
Gln	Ala	Arg	Thr	Ser	His	Leu	Leu	Pro	Asn	Pro	Gly	Ser	Pro	Thr	Lys	
305					310					315					320	
Val	Tyr	Leu	Glu	Ile	Cys	His	Thr	Ala	Asn	Leu	Ser	Tyr	Pro	Lys	Pro	
				325					330					335		
Leu	Leu	Arg	His	Tyr	Glu	His	Gln	Leu	Ser	Pro	Ala	Ile	Gln	Pro	Met	
			340				345						350			
Lys	Thr	Leu	Leu	Pro	Leu	Arg	Lys	Glu	His	Leu	His	Leu	Ile	Arg	Asn	
		355					360					365				
Asn	Leu	Thr	Thr	Ser	Arg	Phe	Ile	Val	Ala	Gln	Gly	Cys	Ala	Tyr	Lys	
	370				375						380					
Tyr	His	Gln	Phe	Lys	Ile	Asn	Thr	Ser	Gly	Ile	Ala	Lys	Ala	Tyr	Ala	
385					390					395					400	
Ile	Leu	Leu	Pro	Lys	Val	Pro	Asp	Gly	Cys	Tyr	Glu	Tyr	Ser	Lys	Gly	
				405				410						415		
Glu	Ala	Tyr	Gln	Ile	Gly	Phe	Gly	Glu	Ile	Arg	Tyr	Lys	Leu	Lys	Ser	
			420				425						430			
Ser	His	Pro	Leu	Thr	Gln	Leu	Asn	Asp	Lys	Gln	Val	Ile	Glu	Leu	Phe	
		435					440					445				
Asn	Cys	Gly	Ile	Asn	Phe	Ser	Ser	Ile	Tyr	Asn	Pro	Val	Asn	Pro	Leu	
	450				455						460					
Gln	Ala	Pro	Leu	Pro	Asn	Arg	Tyr	Ala	Phe	Phe	Asn	Gln	Gly	Asn	Leu	
465					470					475					480	
Tyr	Ile	Met	Asp	Ser	Pro	Val	Phe	Ile	Lys	Asn	Asp	Pro	Thr	Leu	Gln	
				485					490					495		
Lys	Phe	Val	Thr	Ser	Glu	Thr	Glu	Lys	Gln	Glu	Gly	Ser	Ser	Glu	Thr	
		500						505						510		
Gln	Pro	Tyr	Ile	Ala	Phe	Val	Asp	Lys	Gly	Leu	Pro	Pro	Glu	Asp	Phe	
		515					520						525			
Lys	Glu	Phe	Val	Glu	Phe	Ile	His	Asn	Phe	Gly	Ile	Gln	Val	Pro	Lys	
	530					535					540					
Gly	His	Val	Leu	Val	Leu	Gly	Asp	Asn	Tyr	Pro	Met	Ser	Ala	Asp	Ser	
545					550					555					560	
Arg	Glu	Phe	Gly	Phe	Val	Pro	Met	Glu	Asn	Leu	Leu	Gly	Ser	Pro	Leu	
				565					570					575		
Cys	Thr	Phe	Trp	Pro	Ile	Gly	Arg	Met	Gly	Arg	Leu	Thr	Gly	Val	Ser	
		580						585					590			
Ala	Pro	Thr	Thr	Leu	Ser	Gly	Tyr	Leu	Val	Ser	Gly	Ile	Ala	Leu	Ala	
		595					600						605			

Thr Gly Leu Ser Leu  Gly Tyr Val Tyr Tyr Gln Lys A rg Arg
 610 615 620
 Leu Phe Pro Lys Lys Glu Glu Lys Asn His Lys Lys
 625 630 635

<210>129

<211>276

<212>PRT

<213>Chlamydia pneumoniae

<400>129

Gln Leu Gln Asn Arg Tyr Pro Ile Met Pro Asn Asp Ser Ser Thr Tyr
 1 5 10 15
 Phe Glu Arg Ile Leu Gln Lys Tyr Leu Met Lys Lys Gln Gly Lys Thr
 20 25 30
 Leu Phe Leu Phe Leu Phe Leu Ser Phe Leu Phe Ser Thr Ala Phe Ser
 35 40 45
 Gly Leu Phe Ala Ser Gln Thr Ser Ser Leu Arg Thr Ile Gln Glu Asn
 50 55 60
 Ile Phe Leu Ala Lys Thr Gly Asp Tyr Thr Val Leu Ser Arg Gly Ser
 65 70 75 80
 Gln Arg Thr Phe Val Leu Val Lys Ser Thr Thr Pro Lys Thr Val Trp
 85 90 95
 Ile Glu Ile Ile His Phe Pro Cys Ile Ala His Lys Glu Arg Pro Ser
 100 105 110
 Leu Glu Gln Ala Ser Trp Lys Thr Val Ile His Gln Leu Glu Ser Pro
 115 120 125
 Ser Gln Val Phe Val Val Ser Leu Ser Ser Glu Gly Ser Gln Phe Phe
 130 135 140
 Ser Leu Asn Thr Arg Thr Lys Ser Leu Glu Pro Val Gly Lys Ser Thr
 145 150 155 160
 Thr Val Pro Ala Phe Leu Gln Ile Phe Asp Leu Pro Leu Ser Pro Ala
 165 170 175
 Pro Ala Asn Val Ile Lys Thr Lys Gly Lys Glu Asn Lys Pro Trp Ser
 180 185 190
 Pro Lys Val Ser Phe Glu Gly Ala Pro Leu Thr Ser Ile Ser Val Asn
 195 200 205
 Ala Trp Gln Gly Leu Trp Pro Lys Asp Arg Gly Pro Leu Ser Glu Thr
 210 215 220
 Gly Ile Leu Met Tyr Phe Thr Gln Pro Asp Ile Ser Val Phe Pro Leu
 225 230 235 240
 Trp Val Ser Ile Glu Thr Pro Lys Gly Thr Ser Ile Val Arg Ala Val
 245 250 255
 Asp Ile Gly His Gly Ala Thr Ser Pro Tyr Val Tyr Ser Leu Pro Asp
 260 265 270
 Ser Lys Thr Gln
 275

<210>130

<211>109

<212>PRT

<213>Chlamydia pneumoniae

<400>130

Met Lys Lys Asn Thr His Pro Glu Tyr Arg Gln Val Leu Phe Val Asp
 1 5 10 15
 Xaa Ser Thr Gly Tyr Lys Phe Val Cys Gly Xaa Thr Tyr Gln Ser Glu
 20 25 30
 Lys Thr Glu Val Phe Glu Gly Lys Glu Tyr Pro Val Cys Tyr Val Ser
 35 40 45
 Val Ser Ser Ser Ser His Pro Phe Phe Thr Gly Ser Lys Lys Phe Val
 50 55 60
 Asp Ala Glu Gly Arg Val Asp Lys Phe Leu Lys Arg Tyr Ser Asn Val
 65 70 75 80
 Arg Gln Pro Ala Gln Gln Pro Gln Pro Glu Glu Asp Ala Leu Pro Ala
 85 90 95
 Ala Lys Gly Lys Lys Lys Val Val Thr Lys Lys Lys Lys
 100 105

<210>131

<211>359

<212>PRT

<213>Chlamydia pneumoniae

<400>131

Gly Phe Met Lys Lys Lys Val Ala Glu Tyr Leu Asn Arg Leu Ala Glu
 1 5 10 15
 Val Glu Ile Lys Ile Ser Asn Pro Glu Ile Phe Ser Asn Ser Lys Glu
 20 25 30
 Tyr Ser Ala Leu Ser Lys Glu His Ser Tyr Leu Leu Glu Leu Lys Asn
 35 40 45
 Ala Tyr Asp Lys Ile Leu Asn Leu Glu Lys Val Leu Ala Asp Asp Lys
 50 55 60
 Gln Ala Leu Ala Ile Glu Lys Asp Pro Glu Met Val Val Met Leu Glu
 65 70 75 80
 Glu Gly Ile Asn Glu Asn Lys Val Glu Leu Glu Lys Leu Asn Lys Ile
 85 90 95
 Leu Glu Ser Leu Leu Val Pro Pro Asp Pro Asp Asp Asp Leu Asn Val
 100 105 110
 Ile Met Glu Leu Arg Ala Gly Thr Gly Gly Glu Glu Ala Leu Phe
 115 120 125
 Val Gly Asp Cys Val Arg Met Tyr His Leu Tyr Ala Ser Ser Lys Gly
 130 135 140
 Trp Lys Tyr Glu Val Leu Ser Ala Ser Glu Ser Asp Leu Lys Gly Tyr
 145 150 155 160
 Lys Glu Tyr Val Met Gly Ile Ser Gly Thr Gly Val Lys Arg Leu Leu
 165 170 175
 Gln Tyr Glu Ala Gly Thr His Arg Val Gln Arg Val Pro Glu Thr Glu
 180 185 190
 Thr Gln Gly Arg Val His Thr Ser Ala Ile Thr Ile Ala Val Leu Pro
 195 200 205
 Glu Pro Ser Glu Glu Asp Thr Glu Leu Leu Ile Asn Glu Lys Asp Leu
 210 215 220
 Lys Ile Asp Thr Phe Arg Ala Ser Gly Ala Gly Gly Gln His Val Asn
 225 230 235 240
 Val Thr Asp Ser Ala Val Arg Ile Thr His Leu Pro Thr Gly Val Val
 245 250 255
 Val Thr Cys Gln Asp Glu Arg Ser Gln His Lys Asn Lys Asp Lys Ala
 260 265 270
 Met Arg Ile Leu Lys Ala Arg Ile Arg Asp Ala Glu Met Gln Lys Arg
 275 280 285
 His Asn Glu Ala Ser Ala Met Arg Ser Ala Gln Val Gly Ser Gly Asp
 290 295 300
 Arg Ser Glu Arg Ile Arg Thr Tyr Asn Phe Ser Gln Asn Arg Val Thr
 305 310 315 320
 Asp His Arg Ile Gly Leu Thr Leu Tyr Asn Leu Asp Lys Val Met Glu
 325 330 335
 Gly Asp Leu Asp Pro Ile Thr Thr Ala Met Val Ser His Ala Tyr His
 340 345 350
 Gln Leu Leu Glu His Gly Asn
 355

<210>132

<211>296

<212>PRT

<213>Chlamydia pneumoniae

<400>132

Met Pro Thr Thr Ser Tyr Ser Asn Met Glu Ile Lys Lys Ala Ile Gln
 1 5 10 15
 Glu Gly Thr Ala Tyr Leu Asp Tyr Tyr Gly Val Pro Leu Ser Asp Cys
 20 25 30
 Glu Ala Leu Tyr Ile Leu Met Asp Leu Leu Glu Val Ser Ser Arg Ala
 35 40 45
 Lys Leu Phe Asp Leu Val Gly Ile Ser Glu Thr Met Leu Met Glu Tyr
 50 55 60

Arg Lys Arg Leu Ala Arg Gly Gln Arg Cys Pro Thr Asn Tyr Leu
 65 70 75 80
 Asn Gly Ala Val Ser Phe Leu Gly Leu Arg Leu Arg Val Asp Ser Arg
 85 90 95
 Val Leu Ile Pro Arg Thr Glu Thr Glu Leu Leu Ala Glu Tyr Ile Ile
 100 105 110
 Asn Tyr Leu Leu Ser His Ser Glu Ile Gln Thr Phe Tyr Asp Ile Cys
 115 120 125
 Cys Gly Ser Gly Cys Leu Gly Leu Ala Ile Lys Lys Ser Cys Pro His
 130 135 140
 Val Glu Val Val Leu Ser Asp Val Cys Pro Gln Ala Val Ala Val Ala
 145 150 155 160
 Asn Glu Asn Ala Lys Ser Asn Gly Leu Asp Val Lys Ile Leu Leu Gly
 165 170 175
 Asp Leu Ser Ala Pro Tyr Thr Arg Pro Ala Asp Ala Phe Val Cys Asn
 180 185 190
 Pro Pro Tyr Leu Ser Phe Asn Glu Ile Ile His Ile Asp Pro Glu Val
 195 200 205
 Arg Cys Tyr Glu Pro Trp Lys Ala Leu Val Gly Gly Ser Thr Gly Leu
 210 215 220
 Glu Phe Tyr Gln Arg Ile Ala Gln Glu Leu Pro Lys Ile Val Thr Ser
 225 230 235 240
 Thr Gly Val Gly Trp Leu Glu Ile Gly Ser Ser Gln Gly Glu Ser Ile
 245 250 255
 Lys Asn Ile Phe Ser Lys His Gly Ile Tyr Gly Arg Leu His Gln Asp
 260 265 270
 Leu Ser Gly Arg Asp Arg Ile Phe Phe Leu Glu Met Asp Gly Arg Asp
 275 280 285
 Pro Val Ser Ser Gly Ala Tyr Ser
 290 295

<210>133

<211>448

<212>PRT

<213>Chlamydia pneumoniae

<400>133

Met Ile Asn Ser Leu Ser Gln Lys Leu Ser Ser Ile Phe Ser Phe Leu
 1 5 10 15
 Val Ser Ser Arg Arg Ile Asn Glu Glu Asn Ile Ser Glu Ser Ile Arg
 20 25 30
 Glu Val Arg Leu Ala Leu Leu Asp Ala Asp Val Asn Tyr His Val Val
 35 40 45
 Lys Asp Phe Ile Ser Lys Val Lys Xaa Lys Ile Leu Gly Glu Glu Ile
 50 55 60
 Trp Lys His Val Ser Pro Gly Lys Gln Phe Ile Arg Cys Leu His Glu
 65 70 75 80
 Glu Leu Val Ala Phe Leu Ser Asp Gly Arg Glu Glu Phe Thr Ile Gln
 85 90 95
 Lys Thr Pro Ser Ile Ile Leu Leu Cys Gly Leu Gln Gly Ala Gly Lys
 100 105 110
 Thr Thr Thr Ala Ala Lys Leu Ala Asp Tyr Val Ile Lys Asn Lys Lys
 115 120 125
 Ala Lys Lys Val Leu Val Val Pro Cys Asp Leu Lys Arg Phe Ala Ala
 130 135 140
 Val Asp Gln Leu Lys Ile Leu Val Ala Gln Thr Lys Ala Glu Phe Tyr
 145 150 155 160
 Gln Ser Gln Glu Asn Lys Pro Ile Asp Val Val Val Lys Ala Leu Ala
 165 170 175
 Tyr Ala Lys Glu Asn Gly His Asp Phe Val Ile Leu Asp Thr Ala Gly
 180 185 190
 Arg Leu Asn Ile Asp Asn Glu Leu Met Glu Glu Leu Thr Ala Ile Gln
 195 200 205
 Lys Val Ser Gln Ala Asn Glu Arg Leu Phe Val Met Asn Val Ala Met
 210 215 220
 Gly Gln Asp Val Leu Ala Thr Val Gln Ala Phe Asp Gln Ser Leu Asp

225
 Leu Thr Gly Val Ile Leu Ser Met Thr Asp Gly Asp Ala Arg Ala Gly
 245 250 255
 Ala Val Phe Ser Ile Lys His Val Leu Gly Lys Pro Ile Lys Phe Glu
 260 265 270
 Gly Cys Gly Glu Arg Ile Gln Asp Leu Arg Ser Phe Asp Pro Gln Ser
 275 280 285
 Met Ala Glu Arg Ile Leu Gly Met Gly Asp Thr Ile Asn Phe Val Lys
 290 295 300
 Glu Met Arg Glu Tyr Ile Ser Glu Glu Glu Asp Ala Glu Leu Gly Lys
 305 310 315 320
 Lys Leu Val Thr Ala Ala Phe Thr Tyr Glu Asp Tyr Tyr Lys Gln Met
 325 330 335
 Lys Ala Phe Arg Arg Met Gly Pro Leu Arg Lys Leu Leu Gly Met Met
 340 345 350
 Pro Gly Phe Asn Asn Ala Lys Pro Ser Gln Lys Glu Ile Glu Asp Ser
 355 360 365
 Glu Gln Gln Met Lys Arg Thr Glu Ala Ile Ile Leu Ser Met Thr Pro
 370 375 380
 Glu Glu Arg Lys Glu Leu Val Glu Leu Asp Met Ser Arg Met Lys Arg
 385 390 395 400
 Ile Ala Ser Gly Cys Gly Leu Thr Leu Gly Asp Val Asn Gln Phe Arg
 405 410 415
 Lys Gln Met Ser Gln Ser Lys Lys Phe Phe Lys Gly Met Ser Lys Gly
 420 425 430
 Lys Met Glu Gln Val Arg Lys Lys Met Ser Gly Gly Asn Gln Trp Arg
 435 440 445

<210>134

<211>208

<212>PRT

<213>Chlamydia pneumoniae

<400>134

Met Lys Ile Asp Ile Leu Ser Leu Ser Pro Gly Tyr Phe Asp Gly Pro
 1 5 10 15
 Leu Gln Thr Ser Ile Leu Gly Arg Ala Ile Lys Gln Arg Leu Leu Asp
 20 25 30
 Val Gln Leu Thr Asn Leu Arg Asp Phe Gly Leu Gly Lys Trp Lys Gln
 35 40 45
 Val Asp Asp Thr Pro Phe Ser Gly Gly Gly Met Leu Leu Met Ala Glu
 50 55 60
 Pro Val Thr Ser Ala Ile Arg Ser Val Arg Lys Glu Asn Ser Lys Val
 65 70 75 80
 Ile Tyr Leu Ser Pro Gln Gly Ala Leu Leu Thr Ala Glu Lys Ser Arg
 85 90 95
 Glu Leu Ala Ala Ala Ser His Leu Ile Leu Leu Cys Gly His Tyr Glu
 100 105 110
 Gly Ile Asp Glu Arg Ala Ile Glu Ser Glu Val Asp Glu Ile Ser
 115 120 125
 Ile Gly Asp Tyr Val Leu Thr Asn Gly Gly Ile Ala Ala Leu Val Leu
 130 135 140
 Ile Asp Ala Val Ser Arg Phe Ile Pro Gly Val Leu Gly Asn Gln Glu
 145 150 155 160
 Ser Ala Glu Arg Asp Ser Leu Glu Asn Gly Leu Leu Glu Gly Pro Gln
 165 170 175
 Tyr Thr Arg Pro Arg Glu Phe Glu Gly Lys Glu Val Pro Glu Val Leu
 180 185 190
 Leu Gln Gly Asp His Lys Ala Ile Ser Ser Val Glu Ile Gly Ala Lys
 195 200 205

<210>135

<211>189

<212>PRT

<213>Chlamydia pneumoniae

<400>135

Lys Asp Leu Ser Ile His Ala Leu Glu Ser Leu Lys Gly Lys Lys Phe

1 5 10 15
 Gln Lys Tyr Cys Cys Lys Gly Ile Thr Lys Pro Phe His Gln Trp Arg
 20 25 30
 Leu Glu Gln Ser Glu Arg Arg Thr Tyr Glu Arg Arg Pro Asp Leu Tyr
 35 40 45
 Leu Asn Tyr Leu Tyr Lys Arg Ser Ile Asp His Lys Phe Asp Glu Glu
 50 55 60
 Thr Thr Thr Asn Arg Asp His Phe Lys Cys Asp Lys Ile Ser Val Val
 65 70 75 80
 Leu Glu Val Asn Lys Leu Lys Arg Ala Lys Asn Phe Tyr Cys Lys Val
 85 90 95
 Phe Gly Leu Asp Ala Met Ser Cys Glu Asn Lys Phe Cys Leu Pro His
 100 105 110
 Glu Gly Lys Thr Ile Phe Trp Leu Arg Glu Val Gln Ala Glu Lys Lys
 115 120 125
 Asn Ile Val Thr Leu Ser Leu Ser Leu Asp Cys Ala Cys Glu Glu Asp
 130 135 140
 Phe Cys Tyr Leu Leu Arg Arg Trp Glu Leu Phe Gly Gly Lys Leu Leu
 145 150 155 160
 Glu Lys Gln Ala Asp Glu His Ala Val Trp Ala Leu Ala Gln Asp Leu
 165 170 175
 Asp Gly His Ala Trp Ile Phe Ser Trp His Arg Met Lys
 180 185

<210>136

<211>121

<212>PRT

<213>Chlamydia pneumoniae

<400>136

Met Val Asn Leu Leu Lys Glu Leu Glu Gln Glu Gln Cys Arg Asn Asp
 1 5 10 15
 Leu Pro Glu Phe His Val Gly Asp Thr Ile Arg Leu Ala Thr Lys Ile
 20 25 30
 Ser Glu Gly Gly Lys Glu Arg Val Gln Val Phe Gln Gly Thr Val Met
 35 40 45
 Ala Arg Arg Gly Gly Gly Ser Gly Glu Thr Val Ser Leu His Arg Val
 50 55 60
 Ala Tyr Gly Glu Gly Met Glu Lys Ser Phe Leu Leu Asn Ser Pro Arg
 65 70 75 80
 Ile Val Ser Ile Glu Ile Val Lys Arg Gly Lys Val Ala Arg Ala Arg
 85 90 95
 Leu Tyr Tyr Leu Arg Gly Lys Thr Gly Lys Ala Ala Lys Val Lys Glu
 100 105 110
 Phe Val Gly Pro Arg Ser Ser Lys Lys
 115 120

<210>137

<211>214

<212>PRT

<213>Chlamydia pneumoniae

<400>137

Met Asn Thr Ser Ile Ser Glu Ile Gln Arg Phe Leu Ser Met Ile Ala
 1 5 10 15
 Phe Glu Lys Glu Leu Val Ser Glu Asp Phe Ser Val Val Ala Gly Ile
 20 25 30
 Asp Glu Ala Gly Arg Gly Pro Leu Ala Gly Pro Val Val Ala Ser Ala
 35 40 45
 Cys Ile Leu Pro Lys Gly Lys Val Phe Pro Gly Val Asn Asp Ser Lys
 50 55 60
 Lys Leu Ser Pro Lys Gln Arg Ala Gln Val Arg Asp Ala Leu Met Gln
 65 70 75 80
 Asp Pro Glu Val Cys Phe Gly Ile Gly Val Ile Ser Val Glu Arg Ile
 85 90 95
 Asp Gln Val Asn Ile Leu Glu Ala Thr Lys Glu Ala Met Leu Gln Ala
 100 105 110
 Ile Ser Ser Leu Pro Ile Ser Pro Asp Ile Leu Leu Val Asp Gly Leu

115 120 1
 Tyr Leu Pro His Asp Ile Pro Cys Lys Lys Ile Ile Gln Gly Asp Ala
 130 135 140
 Lys Ser Ala Ser Ile Ala Ala Ser Ile Leu Ala Lys Glu His Arg
 145 150 155 160
 Asp Asp Leu Met Leu Gln Leu His Arg Leu Tyr Pro Glu Tyr Gly Phe
 165 170 175
 Asp Arg His Lys Gly Tyr Gly Thr Ser Leu His Val Glu Ala Ile Arg
 180 185 190
 Arg Tyr Gly Pro Ser Pro Cys His Arg Lys Ser Phe Ser Pro Ile Lys
 195 200 205
 Gln Met Cys Ala Ile Val
 210

<210>138

<211>209

<212>PRT

<213>Chlamydia pneumoniae

<400>138

Val Cys Tyr Cys Met Asn Lys Ile Leu Val Asp Ser Pro Phe Ser Pro
 1 5 10 15
 Asp His Gln Lys Cys Cys Pro Lys Leu Phe Thr Ile Ser Ala Pro Ala
 20 25 30
 Gly Val Gly Lys Thr Thr Leu Val Arg Met Leu Glu Gln Glu Phe Ser
 35 40 45
 Ser Ala Phe Ala Glu Thr Ile Ser Val Thr Thr Arg Lys Pro Arg Glu
 50 55 60
 Gly Glu Val Pro Gly Lys Asp Tyr His Phe Val Ser His Glu Glu Phe
 65 70 75 80
 Gln Arg Leu Leu Asp Arg Gln Ala Leu Leu Glu Trp Val Phe Leu Phe
 85 90 95
 Gly Glu Cys Tyr Gly Thr Ser Met Leu Glu Ile Glu Arg Ile Trp Ser
 100 105 110
 Leu Gly Lys His Ala Val Ala Val Ile Asp Ile Gln Gly Ala Leu Phe
 115 120 125
 Ile Arg Ser Arg Met Pro Ser Val Ser Ile Phe Ile Ala Pro Pro Ser
 130 135 140
 Gln Glu Glu Leu Glu Arg Arg Leu Ala Ser Arg Gly Ser Glu Glu Gly
 145 150 155 160
 Ser Gln Arg Lys Glu Arg Leu Glu His Ser Leu Ile Glu Leu Ala Ala
 165 170 175
 Ala Asn Gln Phe Asp Tyr Val Ile Ile Asn Asp Asp Leu Asn Gln Ala
 180 185 190
 Tyr Arg Val Leu Lys Ser Ile Phe Ile Ala Glu Glu His Arg Asn Ile
 195 200 205
 Leu

<210>139

<211>100

<212>PRT

<213>Chlamydia pneumoniae

<400>139

Glu His Ile Met Ile Lys Lys Asp Arg Phe Thr Asn Glu Lys Leu Asn
 1 5 10 15
 Lys Leu Phe Asp Ser Pro Phe Ser Leu Val Asn Tyr Ala Ile Lys Gln
 20 25 30
 Ala Lys Ile Lys Ile Ala Lys Gly Asp Val Arg Ser Ser Asn Val Ala
 35 40 45
 Ile Glu Thr Leu Val Leu Leu Asp Arg Glu Gly Ile Gln Pro Glu Phe
 50 55 60
 Thr Glu Glu Ile Val Val Thr Ala Ser Pro Thr Val Glu Arg Lys Arg
 65 70 75 80
 Ser Glu His Thr Asn Ser Arg Lys Lys Asp Pro Ser Ala Tyr Thr Trp
 85 90 95
 Ser Asp Val Lys

100

<210>140

<211>554

<212>PRT

<213>Chlamydia pneumoniae

<400>140

Cys Lys Val Met Pro Gln Lys Val Leu Ile Thr Ser Ala Leu Pro Tyr
 1 5 10 15
 Ala Asn Gly Pro Leu His Phe Gly His Ile Ala Gly Val Tyr Leu Pro
 20 25 30
 Ala Asp Val Tyr Ala Arg Phe Arg Arg Leu Leu Gly Asp Asp Val Leu
 35 40 45
 Tyr Ile Cys Gly Ser Asp Glu Phe Gly Ile Ala Ile Thr Leu Asn Ala
 50 55 60
 Asp Arg Glu Gly Leu Gly Tyr Gln Glu Tyr Val Asp Met Tyr His Lys
 65 70 75 80
 Leu His Lys Asp Thr Phe Glu Lys Leu Gly Phe Ala Leu Asp Phe Phe
 85 90 95
 Ser Arg Thr Thr Asn Pro Phe His Ala Glu Leu Val Gln Asp Phe Tyr
 100 105 110
 Ser Gln Leu Lys Ala Ser Gly Leu Ile Glu Asn Arg Ile Ser Glu Gln
 115 120 125
 Leu Tyr Ser Glu Gln Glu Gln Arg Phe Leu Ala Asp Arg Tyr Val Glu
 130 135 140
 Gly Thr Cys Pro Arg Cys Gly Phe Asp His Ala Arg Gly Asp Glu Cys
 145 150 155 160
 Gln Ser Cys Gly Ala Asp Tyr Glu Ala Ile Asp Leu Ile Asp Pro Lys
 165 170 175
 Ser Lys Ile Ser Gly Val Glu Leu Val Lys Lys Glu Thr Glu His Ser
 180 185 190
 Tyr Phe Leu Leu Asp Arg Met Lys Asp Ala Leu Leu Ser Phe Ile Gln
 195 200 205
 Gly Cys Tyr Leu Pro Asp His Val Arg Lys Phe Val Val Asp Tyr Ile
 210 215 220
 Glu His Val Arg Ser Arg Ala Ile Thr Arg Asp Leu Ser Trp Gly Ile
 225 230 235 240
 Pro Val Pro Asp Phe Pro Gly Lys Val Phe Tyr Val Trp Phe Asp Ala
 245 250 255
 Pro Ile Gly Tyr Ile Ser Gly Thr Met Glu Trp Ala Ala Ser Gln Gly
 260 265 270
 Asn Pro Asp Glu Trp Lys Arg Phe Trp Leu Glu Asp Gly Val Glu Tyr
 275 280 285
 Val Gln Phe Ile Gly Lys Asp Asn Leu Pro Phe His Ser Val Val Phe
 290 295 300
 Pro Ala Met Glu Leu Gly Gln Lys Leu Asp Tyr Lys Lys Val Asp Ala
 305 310 315 320
 Leu Val Val Ser Glu Phe Tyr Leu Leu Glu Gly Arg Gln Phe Ser Lys
 325 330 335
 Ser Glu Gly Asn Tyr Val Asp Met Asp Lys Phe Leu Ser Ser Tyr Ser
 340 345 350
 Leu Asp Lys Leu Arg Tyr Val Leu Ala Ala Thr Ala Pro Glu Thr Ser
 355 360 365
 Asp Ser Glu Phe Thr Phe Leu Asp Phe Lys Thr Arg Cys Asn Ser Glu
 370 375 380
 Leu Val Gly Lys Phe Gly Asn Phe Ile Asn Arg Val Leu Ala Phe Ala
 385 390 395 400
 Glu Lys Asn His Tyr Asp Lys Leu Ser Tyr His Ser Val Val Leu Glu
 405 410 415
 Asp Ser Asp Arg Ala Phe Leu Glu Glu Val Arg Gln Leu Val Arg Asp
 420 425 430
 Ala Glu Lys Cys Tyr Arg Glu Tyr Ser Leu Arg Lys Ala Thr Ser Val
 435 440 445
 Ile Met Ser Leu Ala Ala Leu Gly Asn Val Tyr Phe Asn Gln Gln Ala
 450 455 460

Pro Trp Lys Leu Lys Glu Gly Thr Arg Glu Arg Val Glu Ala Ile
 465 470 475 480
 Leu Phe Cys Ala Cys Tyr Cys Gln Lys Leu Leu Ala Leu Ile Ser Tyr
 485 490 495
 Pro Ile Ile Pro Glu Ser Ala Val Ala Ile Trp Glu Met Ile Ser Pro
 500 505 510
 Lys Ser Leu Glu Asn Cys Asn Leu Asp Thr Met Tyr Ala Arg Asp Leu
 515 520 525
 Trp Lys Glu Glu Ile Leu Asp Val Ile Asn Glu Glu Phe His Leu Lys
 530 535 540
 Ser Pro Arg Leu Leu Phe Thr Thr Val Glu
 545 550
 <210>141
 <211>408
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>141
 Ser Gln Ala His Phe Ile Phe Phe Glu Glu Asn Pro Phe Tyr Arg Arg
 1 5 10 15
 Arg Lys Ser Asn Cys Leu Gly Arg Gly Lys Leu Ser Ile Asp Leu Ala
 20 25 30
 Glu Gln Gln Arg Glu Ala Ile Lys Ala Cys Phe Ser Glu Lys Leu Leu
 35 40 45
 Ile Ile Thr Gly Gly Pro Gly Thr Gly Lys Ser Thr Ile Thr Gln Ala
 50 55 60
 Ile Leu Lys Ile Phe Glu Gln Val Thr His Lys Ile Ile Leu Ala Ala
 65 70 75 80
 Pro Thr Gly Lys Ala Ala Lys Arg Met Thr Glu Ile Thr Gln Lys His
 85 90 95
 Ser Val Thr Ile His Ala Leu Leu Gln Tyr Asp Phe Lys Thr Lys Ser
 100 105 110
 Phe Arg Lys Asn His Asp Asn Pro Ile Asp Cys Asp Leu Ile Ile Val
 115 120 125
 Asp Glu Ser Gly Met Met Asp Thr His Leu Leu His His Phe Leu Lys
 130 135 140
 Ala Leu Pro Asp Tyr Thr Thr Leu Val Phe Ile Gly Asp Ile His Gln
 145 150 155 160
 Leu Pro Ser Val Gly Pro Gly Asn Ile Leu Lys Asp Leu Ile Thr Ser
 165 170 175
 Asn Lys Met Thr Val Ile Arg Leu Asn Lys Ile Phe Arg Gln Val His
 180 185 190
 Asp Ser Gly Ile Val Thr Asn Ala His Arg Val Asn Glu Gly Glu Leu
 195 200 205
 Pro Ile Leu Tyr Ser Glu Thr Gly Arg Arg Asp Phe Leu Phe Phe Gln
 210 215 220
 Lys Asp Asp Gln Glu Glu Ala Leu Asn His Ile Ile His Leu Val Thr
 225 230 235 240
 Lys Phe Val Pro Gln Lys Tyr His Ile Tyr Pro Gln Asp Ile Gln Val
 245 250 255
 Leu Ala Pro Met Lys Lys Gly Thr Leu Gly Ile Tyr Asn Leu Asn Lys
 260 265 270
 Ala Leu Lys His Ala Leu Asn Pro Lys Lys Ala Asn Leu His Gly Arg
 275 280 285
 Phe Gln Ser Tyr Ala Val Gly Asp Lys Val Met Gln Ile Arg Asn Asn
 290 295 300
 Tyr Asn Lys Glu Val Phe Asn Gly Asp Ile Gly Tyr Val Ser Thr Ile
 305 310 315 320
 Asn Phe Glu Asp Lys Ala Val Val Val Arg Met Glu Gly Lys His Val
 325 330 335
 Gly Tyr Ser Phe Ser Glu Leu Asp Asp Leu Val Leu Ala Tyr Ala Thr
 340 345 350
 Ser Val His Lys Tyr Gln Gly Ser Glu Ser Pro Cys Ile Ile Ile Pro
 355 360 365
 Ile His Thr Ser His Phe Met Met Leu Tyr Arg Asn Leu Leu Tyr Thr

370 75 380
 Ala Ile Thr Arg Gly Lys Lys Leu Val Ile Leu Val Gly Thr Lys Lys
 385 390 395 400
 Ala Ile Cys Tyr Cys Asn Lys Lys
 405
 <210>142
 <211>313
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>142
 Asn Ser Met Glu Lys Ile Cys Gly Tyr Leu Glu Gln Ile Leu Val Glu
 1 5 10 15
 Asn Lys Asp Ser Gly Asp Ile Thr Ala Tyr Ile Lys Ile Pro Asn Lys
 20 25 30
 Thr Thr Pro Ile Leu Ile Lys Gly Lys Leu Pro Gln Pro Leu Glu Leu
 35 40 45
 Gly Ser Pro Ile Gln Ile Tyr Gly Val Trp Ser His Ser Pro Ser Asn
 50 55 60
 Thr Lys Tyr Phe Gln Ile His Ser Tyr Asp Ser Pro Leu Leu Tyr Glu
 65 70 75 80
 Tyr Arg Gly Val Phe His Tyr Leu Thr Ser Lys Leu Ile Lys Gly Ile
 85 90 95
 Gly Pro Lys Ile Ala Glu Lys Ile Ile Glu Lys Phe Gln Glu Lys Thr
 100 105 110
 Cys Tyr Val Leu Asp Ile Thr Pro Glu Arg Leu Ser Glu Val Ser Gly
 115 120 125
 Ile Ser Glu Thr Arg Cys Val Ser Ile Cys Lys Gln Leu Cys Glu Gln
 130 135 140
 Lys Met Leu Arg Lys Thr Leu Leu Phe Leu Gln Glu Tyr Asn Ile Pro
 145 150 155 160
 Ile His Tyr Gly Val Arg Ile Phe Lys Lys Tyr Gln Glu Lys Ser Ile
 165 170 175
 Glu Lys Ile Cys Glu Asp Pro Phe Leu Leu Ala Arg Glu Met Glu Gly
 180 185 190
 Ile Gly Phe Lys Thr Ala Asp Phe Ile Ala Met Lys Leu Gly Val Pro
 195 200 205
 Arg Asn Ser Glu Ser Arg Leu Cys Ala Gly Ile Gln His Ser Leu Glu
 210 215 220
 Glu Leu Gln Glu Glu Gly His Thr Cys Tyr Pro Ile Glu Leu Leu Ile
 225 230 235 240
 Asp Val Val Ala Lys Leu Leu Asn Gln Asp Val Phe Asp Thr Pro Ile
 245 250 255
 Thr Leu Glu Glu Ile Asp Thr Gln Ile Leu Asn Met Gln Lys Arg Asn
 260 265 270
 Phe Tyr Ile Phe Lys Thr Phe Leu Gly His Ser Met Ser Gly His Val
 275 280 285
 Ile Ser Ile Ser Gln Arg Lys Leu Leu Phe Leu Ile Ser Ser Ala Phe
 290 295 300
 Tyr Phe Leu Arg Gly Glu Ser Val Leu
 305 310
 <210>143
 <211>498
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>143
 Ile Arg Ser Lys Gln Arg Thr Val Ala Ile Thr Leu Leu Val Leu Gly
 1 5 10 15
 Ile Leu Leu Ile Ala Ser Gly Ile Ile Phe Leu Ala Val Ala Ile Pro
 20 25 30
 Gly Leu Ser Ser Ala Val Ala Leu Gly Leu Gly Cys Gly Met Thr Ala
 35 40 45
 Leu Gly Thr Val Leu Leu Ile Thr Gly Leu Val Leu Leu Ile Arg Ser
 50 55 60
 Glu Lys Leu Ala Leu Glu Gln Val Glu Ile Lys Gln Ala Arg Thr Arg

65					70					75					80
Val	Asn	Asn	Glu	Leu	Asp	Gln	Leu	Ser	Gln	Tyr	Val	Phe	Tyr	Thr	Glu
				85					90					95	
Asn	Val	Leu	Asp	Asn	Leu	Lys	Arg	Trp	Ser	Tyr	Arg	Asp	Leu	Gly	Phe
			100					105					110		
Val	Arg	Gln	Ala	Gln	Glu	Glu	Val	Thr	Asn	Leu	Glu	Gln	Asp	Ile	Glu
		115					120					125			
Glu	Ile	Phe	Leu	Thr	Leu	Arg	Asp	Ile	Arg	Asn	Ala	Leu	Asp	Asn	Glu
	130					135					140				
Glu	Phe	Phe	Met	Thr	His	Ala	Lys	Gln	Cys	Leu	Ala	Gln	Val	Gly	Glu
145					150				155						160
Ser	Leu	Phe	Gln	Asp	Ala	Ser	Ile	Asp	Glu	Phe	Ile	Asn	Leu	Ala	His
			165					170						175	
Leu	Ser	Glu	Ile	Arg	Gln	His	Leu	Asp	Ile	Asn	Asp	Pro	Arg	Trp	Ser
			180					185					190		
Met	Ile	Thr	Lys	Lys	Val	Lys	Gly	Thr	Val	Val	Arg	Phe	Ile	Tyr	Val
		195					200					205			
Ser	Thr	Met	Tyr	Lys	Gln	Ile	Lys	Ser	Asn	Phe	Glu	Lys	Ser	Asp	Phe
	210					215					220				
Gly	Gln	Leu	Arg	Lys	Met	Leu	Leu	Asn	Asn	Tyr	Lys	Thr	Ile	Glu	Glu
225					230					235					240
Val	Leu	Tyr	Gln	Ser	Phe	Gln	Arg	Gly	Tyr	Asn	Arg	Ala	Ala	Leu	Leu
			245					250						255	
Ser	Glu	Lys	Thr	Arg	Ile	Ile	His	Thr	Ser	Ser	Leu	Leu	His	Trp	Glu
			260					265					270		
Lys	Asp	Glu	Asp	Lys	His	Leu	Asn	Ile	Lys	Asn	Glu	Cys	Ala	Ser	Arg
	275						280					285			
Leu	Glu	Asn	Phe	Lys	Lys	Phe	Arg	Thr	Leu	Phe	Leu	Gly	Leu	Ser	Glu
	290					295					300				
Glu	Asp	Val	Ile	Asp	Phe	Thr	Gly	Ala	Ser	Gly	Trp	Asp	Cys	Ser	Lys
305					310					315					320
Leu	Pro	Arg	Lys	Glu	Val	Pro	Leu	Asp	Gly	Gly	Lys	Lys	Lys	Leu	Arg
			325						330					335	
Phe	Lys	Arg	Thr	Phe	Ala	Asp	Glu	Gln	Val	Gly	Asp	Trp	Asp	Arg	Thr
		340					345						350		
Thr	Ser	Leu	Glu	His	Met	Thr	Pro	Gln	Glu	Glu	Asp	Pro	Leu	Asp	Arg
	355						360					365			
Leu	Met	Asp	Gln	Val	Glu	Gln	Glu	Ala	Thr	Ser	Val	Leu	Lys	Asp	Gln
	370					375					380				
Asp	Arg	Tyr	Trp	Lys	Glu	Ile	Glu	Thr	Ser	Glu	Ala	Lys	Phe	Arg	Ser
385					390					395					400
Leu	Pro	Arg	Glu	Asp	Asp	Phe	Glu	Lys	Gln	Ser	Gln	Ile	Asp	Ser	Tyr
			405						410					415	
Ile	Arg	Asp	Leu	Asp	Asp	His	Leu	Ser	Val	Trp	Ala	Asn	Gln	Leu	Ser
		420						425					430		
Ala	Ala	Glu	Asp	Ala	Leu	Ile	Glu	Val	Thr	Asp	Val	Gln	Glu	His	Gly
		435					440					445			
Asn	Arg	Glu	Met	Leu	Lys	Asn	Ile	Gln	Gln	Gly	Leu	Glu	Leu	Ile	Glu
	450					455					460				
Asp	Ala	Val	Lys	Ala	Thr	Leu	Pro	Arg	Val	Asp	Phe	Ile	Gln	Glu	Leu
465					470					475					480
Leu	Glu	Lys	Glu	Glu	Leu	Pro	Leu	Val	Ala	Ala	Arg	Met	Ser	Leu	Glu
			485					490						495	

Asn Ser

<210>144

<211>538

<212>PRT

<213>Chlamydia pneumoniae

<400>144

Pro	Phe	Phe	Ser	Lys	Pro	Pro	Glu	Glu	Ile	Ser	Gln	Leu	Glu	Ser	Tyr
1				5					10					15	
Ile	Arg	Ser	Ala	Asn	Asp	Leu	Asn	Thr	Ile	Lys	Thr	Trp	Pro	His	
			20				25					30			

Lys Asp Gln Arg Leu Glu Thr Val Ser Arg Lys Leu Arg Leu
 35 40 45
 Ala Ala Ala Gln Asn Tyr Met Ile Ser Glu Leu Cys Glu Ile Ser Glu
 50 55 60
 Ile Leu Glu Glu Glu Glu His His Leu Ile Leu Ala Gln Glu Ser Leu
 65 70 75 80
 Glu Trp Ile Gly Lys Ser Leu Phe Ser Thr Phe Leu Asp Met Glu Ser
 85 90 95
 Phe Leu Asn Leu Ser His Leu Ser Glu Val Arg Pro Tyr Leu Ala Val
 100 105 110
 Asn Asp Pro Arg Leu Leu Glu Ile Thr Glu Glu Ser Trp Glu Val Val
 115 120 125
 Ser His Phe Ile Asn Val Thr Ser Ala Phe Lys Lys Ala Gln Ile Leu
 130 135 140
 Phe Lys Asn Asn Glu His Ser Arg Met Lys Lys Lys Leu Glu Ser Val
 145 150 155 160
 Gln Glu Leu Leu Glu Thr Phe Ile Tyr Lys Ser Leu Lys Arg Ser Tyr
 165 170 175
 Arg Glu Leu Gly Cys Leu Ser Glu Lys Met Arg Ile Ile His Asp Asn
 180 185 190
 Pro Leu Phe Pro Trp Val Gln Asp Gln Gln Lys Tyr Ala His Ala Lys
 195 200 205
 Asn Glu Phe Gly Glu Ile Ala Arg Cys Leu Glu Glu Phe Glu Lys Thr
 210 215 220
 Phe Phe Trp Leu Asp Glu Glu Cys Ala Ile Ser Tyr Met Asp Cys Trp
 225 230 235 240
 Asp Phe Leu Asn Glu Ser Ile Gln Asn Lys Lys Ser Arg Val Asp Arg
 245 250 255
 Asp Tyr Ile Ser Thr Lys Lys Ile Ala Leu Lys Asp Arg Ala Arg Thr
 260 265 270
 Tyr Ala Lys Val Leu Leu Glu Glu Asn Pro Thr Thr Glu Gly Lys Ile
 275 280 285
 Asp Leu Gln Asp Ala Gln Arg Ala Phe Glu Arg Gln Ser Gln Glu Phe
 290 295 300
 Tyr Thr Leu Glu His Thr Glu Thr Lys Val Arg Leu Glu Ala Leu Gln
 305 310 315 320
 Gln Cys Phe Ser Asp Leu Arg Glu Ala Thr Asn Val Arg Gln Val Arg
 325 330 335
 Phe Thr Asn Ser Glu Asn Ala Asn Asp Leu Lys Glu Ser Phe Glu Lys
 340 345 350
 Ile Asp Lys Glu Arg Val Arg Tyr Gln Lys Glu Gln Arg Leu Tyr Trp
 355 360 365
 Glu Thr Ile Asp Arg Asn Glu Gln Glu Leu Arg Glu Glu Ile Gly Glu
 370 375 380
 Ser Leu Arg Leu Gln Asn Arg Arg Lys Gly Tyr Arg Ala Gly Tyr Asp
 385 390 395 400
 Ala Gly Arg Leu Lys Gly Leu Leu Arg Gln Trp Lys Lys Asn Leu Arg
 405 410 415
 Asp Val Glu Ala His Leu Glu Asp Ala Thr Met Asp Phe Glu His Glu
 420 425 430
 Val Ser Lys Ser Glu Leu Cys Ser Val Arg Ala Arg Leu Glu Val Leu
 435 440 445
 Glu Glu Glu Leu Met Asp Met Ser Pro Lys Val Ala Asp Ile Glu Glu
 450 455 460
 Leu Leu Ser Tyr Glu Glu Arg Cys Ile Leu Pro Ile Arg Glu Asn Leu
 465 470 475 480
 Glu Arg Ala Tyr Leu Gln Tyr Asn Lys Cys Ser Glu Ile Leu Ser Lys
 485 490 495
 Ala Lys Phe Leu Leu Ser Gly Arg Arg Ala Ile Ala Ser Phe Gly Ser
 500 505 510
 Glu Ser Lys Arg Gly Gly Cys Pro Val Lys Thr Ser Thr Gly Lys Met
 515 520 525
 Ser Arg Glu Gly Pro Lys Val Arg Asn Ile
 530 535

<210>145

<211>201

<212>PRT

<213>Chlamydia pneumoniae

<400>145

Lys Gly His Thr Ser Asn Ile Ile Ser Val Leu Lys Phe Tyr Pro Arg
 1 5 10 15
 Gln Ser Phe Phe Phe Pro Glu Asp Glu Gln Leu Leu Val Ser Glu Ala
 20 25 30
 Asn Leu Arg Glu Val Gly Ala Gln Leu Lys Gln Val Gln Gly Lys Cys
 35 40 45
 Gln Glu Arg Ala Gln Lys Phe Ala Ile Phe Glu Lys His Ile Gln Glu
 50 55 60
 Gln Lys Ser Leu Ile Lys Glu Gln Val Arg Ser Phe Asp Leu Ala Gly
 65 70 75 80
 Val Gly Phe Leu Lys Ser Glu Leu Leu Ser Ile Ala Cys Asn Leu Tyr
 85 90 95
 Ile Lys Ala Val Val Lys Glu Ser Ile Pro Val Asp Val Pro Cys Met
 100 105 110
 Gln Leu Tyr Tyr Ser Tyr Tyr Glu Asp Asn Glu Ala Val Val Arg Asn
 115 120 125
 Arg Leu Leu Asn Met Thr Glu Arg Tyr Gln Asn Phe Lys Arg Ser Leu
 130 135 140
 Asn Ser Ile Gln Phe Asn Gly Asp Val Leu Leu Arg Asp Pro Val Tyr
 145 150 155 160
 Gln Pro Glu Gly His Glu Thr Arg Leu Lys Glu Arg Glu Leu Gln Glu
 165 170 175
 Thr Thr Leu Ser Cys Lys Lys Leu Lys Val Ala Gln Asp Arg Leu Ser
 180 185 190
 Glu Leu Glu Ser Arg Leu Ser Arg Arg
 195 200

<210>146

<211>259

<212>PRT

<213>Chlamydia pneumoniae

<400>146

Met Leu Arg Asn Gln Val Leu Val Tyr Cys Ser Glu Gly Val Ser Pro
 1 5 10 15
 Tyr Tyr Leu Arg His Thr Ile Arg Phe Leu Lys Tyr Tyr Ser Thr Gln
 20 25 30
 Glu Gly Ala Phe Asp Ile Leu Arg Val Xaa Gly Asn Phe Leu Ile Lys
 35 40 45
 Asn Pro Phe Trp Glu Glu Thr Thr Arg Leu Leu Val Phe Pro Gly Gly
 50 55 60
 Ala Asp Arg Pro Tyr His Arg Val Leu His Gly Leu Gly Thr Ala Arg
 65 70 75 80
 Ile Phe Gln Tyr Val Ser Glu Gly Gly Asn Phe Leu Gly Ile Cys Ala
 85 90 95
 Gly Ala Tyr Phe Gly Ser Lys Met Ile Tyr Phe Tyr Glu Pro Glu Gly
 100 105 110
 Ala Pro Leu Gln Gly Ala Arg Asp Leu Gly Phe Phe Pro Gly Thr Ala
 115 120 125
 Lys Gly Pro Ala Tyr Arg Gly Asn Phe Ser Tyr Val Ser Pro Ser Gly
 130 135 140
 Val Arg Val Ser Pro Gln Leu Phe Ser Asp Phe Gly Leu Gly Tyr Ala
 145 150 155 160
 Met Phe Asn Gly Gly Cys Phe Phe Glu Gly Ser Glu Gly Tyr Pro Gly
 165 170 175
 Val Asn Ile Glu Ser Arg Tyr Asp Asp Leu Pro Gly Lys Pro Ala Ser
 180 185 190
 Ile Val Ser Arg Ile Val Ser Lys Gly Leu Ala Val Leu Ser Gly Pro
 195 200 205
 His Ile Glu Tyr Leu Pro His Tyr Cys Arg Met Val Lys Glu Asn Val
 210 215 220

Gln Lys Thr Arg Glu Leu Gln Arg Glu Arg Thr Thr Asp Arg
 225 230 235 240
 Tyr Cys Gln Asn Leu Val Gln Arg Leu Arg Gln Pro Ala Phe Ser Lys
 245 250 255

Ala Asp Cys

<210>147

<211>396

<212>PRT

<213>Chlamydia pneumoniae

<400>147

Ser Ser Met Val Lys Cys Ser Ser Ile Ile His Glu Asn Lys Lys Pro
 1 5 10 15
 Ala Gln Leu Leu Pro Glu Ser Lys Phe Ala Ala Ile Thr Lys Leu Ser
 20 25 30
 Leu Ala Ile Leu Ser Leu Phe Leu Gly Ile Ala Ala Cys Ile Leu Ile
 35 40 45
 Ala Leu Ser Gly Leu Leu Pro Asn Thr Leu Leu Ile Ile Ala Leu Ser
 50 55 60
 Leu Ile Ser Ile Ile Val Leu Ser Thr Gly Ile Ser Leu Leu Ile Gly
 65 70 75 80
 Thr Gln Cys Ser Lys Ser Val Gln Lys Asp Glu Gln Lys Pro Lys Ser
 85 90 95
 Ile Phe Pro Lys Glu Thr Pro Ser Leu Asp Pro Trp Leu Leu Asn Pro
 100 105 110
 Leu Lys Asn Lys Ile Gln Ser Ser Glu Thr Leu Leu Leu Asp Pro Thr
 115 120 125
 Ser Ile Asn Leu Lys Asn Glu Leu Phe Phe Pro Ser Phe Glu Glu Trp
 130 135 140
 Lys Lys Ile Phe Leu Lys Asp Pro Asp Phe Leu Ile Lys Ser Ala Leu
 145 150 155 160
 Ala Asn Trp Lys Ile Leu Glu Gln Asp Glu Gln Tyr Ile Leu Ser His
 165 170 175
 Ile His Met Asp Pro Arg Ile Phe Val Thr Ser Glu Pro Leu Gln Lys
 180 185 190
 Thr Tyr Gln Lys Leu Gln Glu Lys His Val Asn Asn Leu Gly Ile Ala
 195 200 205
 Ser Gln Val Ser Leu Thr Asp Leu Gln Asn Lys Thr Gln Tyr Glu Asn
 210 215 220
 Asn Leu Ile Glu Thr Thr Thr Asn Glu Ile Thr Tyr Tyr Phe Pro Val
 225 230 235 240
 Val His Asn Pro Asp Ile Leu Arg Ser Glu Trp Asp Pro Ile Ser Asn
 245 250 255
 Gln Leu Tyr Leu Ile Phe Lys Lys Phe Phe Ile His Tyr His Asn Leu
 260 265 270
 Phe Ser Thr Ala Leu Glu Arg Asn Gln Ile Leu Leu Ile Asp Ser Leu
 275 280 285
 Asn Thr Gly Ser Ser Asn Pro Ile Ala Arg Gln Met Glu Leu Leu Ala
 290 295 300
 Phe Leu Cys Val Phe Glu Gln Leu Asp Tyr Asn Glu Asp Glu Tyr Thr
 305 310 315 320
 Ile Glu Pro Arg Asp Tyr Phe Asn Arg Phe Val Tyr Xaa Xaa Ser Xaa
 325 330 335
 Thr Ala Pro Gln Ile Gln Ser Phe Gly Leu Leu His Gly Tyr Glu Glu
 340 345 350
 Met Ser Tyr Ala Ser Asn Asn Ile Arg Asn Val Leu Thr His Ser Ile
 355 360 365
 Val Leu Cys Ser Pro Ile Leu Tyr Gln Leu Ile Thr Glu Phe Asp Thr
 370 375 380
 Thr Lys Ile His Ala Asp Asp Phe Asp Cys Leu Ile
 385 390 395

<210>148

<211>266

<212>PRT

<213>Chlamydia pneumoniae

<400>148

Phe Ser Ser Leu Lys Lys Glu Arg Phe Ser Leu Ser Leu Ala Ile Phe
 1 5 10 15
 Leu Ile Phe Phe Phe Thr Ser Ala Tyr Val Phe Pro Ser Ile Cys Phe
 20 25 30
 Leu Glu Leu Phe Met Glu Asn Ala Met Ser Ser Ser Phe Val Tyr Asn
 35 40 45
 Gly Pro Ser Trp Ile Leu Lys Thr Ser Val Ala Gln Glu Val Phe Lys
 50 55 60
 Lys His Gly Lys Gly Ile Gln Val Leu Leu Ser Thr Ser Val Met Leu
 65 70 75 80
 Phe Ile Gly Leu Gly Val Cys Ala Phe Ile Xaa Pro Gln Xaa Leu Ile
 85 90 95
 Val Phe Val Leu Thr Ile Asp Leu Leu Met Leu Ala Ile Ser Leu Val
 100 105 110
 Leu Phe Leu Leu Lys Val Leu Tyr Ala Pro Ser Met Val Asp Arg Leu
 115 120 125
 Trp Cys Ser Glu Lys Gly Tyr Ala Leu His Gln His Glu Asn Gly Pro
 130 135 140
 Phe Leu Asp Val Lys Arg Val Gln Gln Ile Leu Leu Arg Ser Pro Tyr
 145 150 155 160
 Ile Lys Val Arg Ala Leu Trp Pro Ser Gly Asp Ile Pro Glu Asp Pro
 165 170 175
 Ser Gln Ala Ala Val Leu Leu Leu Ser Pro Trp Thr Phe Phe Ser Ser
 180 185 190
 Val Asp Val Glu Ala Leu Leu Pro Ser Pro Gln Glu Lys Glu Gly Lys
 195 200 205
 Tyr Ile Asp Pro Val Leu Pro Lys Leu Ser Arg Ile Glu Arg Val Ser
 210 215 220
 Leu Leu Val Phe Leu Ser Ala Phe Thr Leu Asp Asp Leu Asn Glu Gln
 225 230 235 240
 Gly Val Asn Pro Leu Met Asn Asn Glu Glu Phe Leu Phe Phe Ile Asn
 245 250 255
 Lys Lys Ala Arg Asp Met Gly Phe Arg Ile
 260 265

<210>149

<211>119

<212>PRT

<213>Chlamydia pneumoniae

<400>149

His Gly Ile Gln Asp Leu Lys His Glu Ile Met Ser Ser Leu Glu Lys
 1 5 10 15
 Thr Gly Val Pro Leu Asp Pro Ser Met Ser Phe Gln Val Ser Gln Ala
 20 25 30
 Met Phe Ser Val Tyr Arg Tyr Leu Arg Gln Arg Asp Leu Thr Thr Ser
 35 40 45
 Glu Leu Arg Cys Phe His Leu Ser Cys Phe Lys Gly Asp Val Val
 50 55 60
 His Cys Leu Ala Ser Phe Glu Asn Pro Lys Asp Leu Ala Asp Ser Asp
 65 70 75 80
 Phe Leu Glu Ala Cys Lys Asn Val Glu Trp Gly Glu Phe Ile Ser Ala
 85 90 95
 Cys Glu Lys Ala Leu Leu Lys Asn Pro Gln Gly Ile Ser Ile Lys Asp
 100 105 110
 Leu Lys Gln Phe Leu Val Arg
 115

<210>150

<211>326

<212>PRT

<213>Chlamydia pneumoniae

<400>150

Ser Met Ile Glu Phe Ala Phe Val Pro His Thr Ser Val Thr Ala Asp
 1 5 10 15

Arg Ile Glu Asp Arg Ala Cys Arg Met Asn Lys Leu Thr Leu
 20 25 30
 Ala Ile Thr Ser Leu Cys Val Leu Ile Ser Ser Val Cys Ile Met Ile
 35 40 45
 Gly Ile Leu Cys Ile Ser Gly Thr Val Gly Thr Tyr Ala Phe Val Val
 50 55 60
 Gly Ile Ile Phe Ser Val Leu Ala Leu Val Ala Cys Val Phe Phe Leu
 65 70 75 80
 Tyr Phe Phe Tyr Phe Ser Ser Glu Glu Phe Lys Cys Ala Ser Ser Gln
 85 90 95
 Glu Phe Arg Phe Leu Pro Ile Pro Ala Val Val Ser Ala Leu Arg Ser
 100 105 110
 Tyr Glu Tyr Ile Ser Gln Asp Ala Ile Asn Asp Val Ile Lys Asp Thr
 115 120 125
 Met Gln Leu Ser Thr Leu Ser Ser Leu Leu Asp Pro Glu Ala Phe Phe
 130 135 140
 Leu Glu Phe Pro Tyr Phe Asn Ser Leu Ile Val Asn His Ser Met Lys
 145 150 155 160
 Glu Ala Asp Arg Leu Ser Arg Glu Ala Phe Leu Ile Leu Leu Gly Glu
 165 170 175
 Ile Thr Trp Lys Asp Cys Glu Thr Lys Ile Leu Pro Trp Leu Lys Asp
 180 185 190
 Pro Asn Ile Thr Pro Asp Asp Phe Trp Lys Leu Leu Lys Asp His Phe
 195 200 205
 Asp Leu Lys Asp Phe Lys Lys Arg Ile Ala Thr Trp Ile Arg Lys Ala
 210 215 220
 Tyr Pro Glu Ile Arg Leu Pro Lys Lys His Cys Leu Asp Lys Ser Ile
 225 230 235 240
 Tyr Lys Gly Cys Cys Lys Phe Leu Leu Leu Ala Glu Asn Asp Val Gln
 245 250 255
 Tyr Gln Arg Leu Leu His Lys Val Cys Tyr Phe Ser Gly Glu Phe Pro
 260 265 270
 Ala Met Val Leu Gly Leu Gly Ser Glu Val Pro Met Val Leu Gly Leu
 275 280 285
 Pro Lys Val Pro Lys Asp Leu Thr Trp Glu Met Phe Met Glu Asn Met
 290 295 300
 Pro Val Leu Leu Gln Ser Lys Arg Glu Gly His Trp Lys Ile Ser Leu
 305 310 315 320
 Glu Asp Val Ala Ser Leu
 325

<210>151

<211>257

<212>PRT

<213>Chlamydia pneumoniae

<400>151

Met Phe Lys Leu Leu Lys Asn Leu Phe Leu Ile Gly Cys Cys Ile Val
 1 5 10 15
 Gly Tyr Phe Trp Met Arg Lys Glu Ser Ile Val Glu Gln Trp Leu Ser
 20 25 30
 Asn Arg Leu His Thr Gln Val Thr Val Gly Arg Val Ser Ile Arg Thr
 35 40 45
 Ser Gly Ile Lys Ile Arg His Ile Cys Ile His Asn Pro Leu Ala Ser
 50 55 60
 Glu Arg Phe Pro Tyr Ala Ala Glu Ile Glu Tyr Ala Asp Val Arg Phe
 65 70 75 80
 Ser Ser Ile Ser Met Leu Leu Thr Lys Gln Leu Glu Ile Ser Glu Leu
 85 90 95
 Ile Ile His Gly Ala Asn Phe Thr Ile Phe Pro Tyr Asp Ser His Gly
 100 105 110
 Thr Lys Thr Asn Trp Ser Leu Val Trp Lys Asn Phe His Pro Gln Lys
 115 120 125
 Glu Thr Pro Ser Asn Leu Trp Ile Asp Arg Ala Pro Val Leu Ile Arg
 130 135 140
 Arg Cys Leu Phe Leu Asn Thr Arg Leu Tyr Gly Leu Arg Ala Asn His

145 150 155 160
 Lys Asp Ile Pro His Leu Ser Val Pro Ser Leu Glu Phe His Ser His
 165 170 175
 Thr Ser Ser Ala Lys Glu Leu Pro Lys Leu Ser Glu Ala Leu Pro Ser
 180 185 190
 Leu Leu Tyr Leu Ala Leu Glu Glu Ser Leu Tyr His Leu Asn Leu Pro
 195 200 205
 Gly Asp Ile Ile Lys Pro Leu Ser Gln Gln Ala His Lys His Phe Tyr
 210 215 220
 Ser Ser Tyr Pro Gln Phe Gln Asp Arg Leu Asn Asp Ile Asn Thr Pro
 225 230 235 240
 Gly Thr Pro Thr Glu Glu Ile Ile Gly Phe Ile Arg Gly Leu Phe Phe
 245 250 255
 His

<210>152

<211>83

<212>PRT

<213>Chlamydia pneumoniae

<400>152

Ser Lys Glu Gly Arg Ala Ser Glu Ser Phe Gly Asn Ser Leu Ala Glu
 1 5 10 15
 Leu Val Trp Leu Trp Asn Ser Lys Asp Gly Thr Glu Arg Trp Gly Met
 20 25 30
 Ser Leu Trp Leu Ala Leu Ser Pro Tyr Asn Arg Val Phe Arg Asn Arg
 35 40 45
 His Leu Arg Met Ser Thr Gly Ala Arg Ser Ile His Lys Phe Glu Gly
 50 55 60
 Val Ser Phe Cys Gly Trp Lys Phe Phe His Thr Lys Asp Gln Phe Val
 65 70 75 80
 Phe Val Pro

<210>153

<211>544

<212>PRT

<213>Chlamydia pneumoniae

<400>153

Met Ala Ala Lys Asn Ile Lys Tyr Asn Glu Glu Ala Arg Xaa Lys Ile
 1 5 10 15
 His Lys Gly Val Lys Thr Leu Ala Glu Ala Val Lys Val Thr Leu Gly
 20 25 30
 Pro Lys Gly Arg His Val Val Ile Asp Lys Ser Phe Gly Ser Pro Gln
 35 40 45
 Val Thr Lys Asp Gly Val Thr Val Ala Lys Glu Ile Glu Leu Glu Asp
 50 55 60
 Lys His Glu Asn Met Gly Ala Gln Met Val Lys Glu Val Ala Ser Lys
 65 70 75 80
 Thr Ala Asp Lys Ala Gly Asp Gly Thr Thr Ala Thr Val Leu Ala
 85 90 95
 Glu Ala Ile Tyr Ser Glu Gly Leu Arg Asn Val Thr Ala Gly Ala Asn
 100 105 110
 Pro Met Asp Leu Lys Arg Gly Ile Asp Lys Ala Val Lys Val Val Val
 115 120 125
 Asp Glu Leu Lys Lys Ile Ser Lys Pro Val Gln His His Lys Glu Ile
 130 135 140
 Ala Gln Val Ala Thr Ile Ser Ala Asn Asn Asp Ser Glu Ile Gly Asn
 145 150 155 160
 Leu Ile Ala Glu Ala Met Glu Lys Val Gly Lys Asn Gly Ser Ile Thr
 165 170 175
 Val Glu Glu Ala Lys Gly Phe Glu Thr Val Leu Asp Val Val Glu Gly
 180 185 190
 Met Asn Phe Asn Arg Gly Tyr Leu Ser Ser Tyr Phe Ser Thr Asn Pro
 195 200 205
 Glu Thr Gln Glu Cys Val Leu Glu Asp Ala Leu Ile Leu Ile Tyr Asp

210	215	220
Lys Lys Ile Ser Gly	Ile Lys Asp Phe Leu Pro	Val Leu Gln Gln Val
225	230	235
Ala Glu Ser Gly Arg	Pro Leu Leu Ile Ile	Ala Glu Glu Ile Glu Gly
245	250	255
Glu Ala Leu Ala Thr	Leu Val Val Asn Arg	Leu Arg Ala Gly Phe Arg
260	265	270
Val Cys Ala Val Lys	Ala Pro Gly Phe Gly	Asp Arg Arg Lys Ala Met
275	280	285
Leu Glu Asp Ile Ala	Ile Leu Thr Gly Gly	Gln Leu Val Ser Glu Glu
290	295	300
Leu Gly Met Lys Leu	Glu Asn Thr Thr	Leu Ala Met Leu Gly Lys Ala
305	310	315
Lys Lys Val Ile Val	Thr Lys Glu Asp Thr	Thr Ile Val Glu Gly Leu
325	330	335
Gly Asn Lys Pro Asp	Ile Gln Ala Arg Cys	Asp Asn Ile Lys Lys Gln
340	345	350
Ile Glu Asp Ser Thr	Ser Asp Tyr Asp	Lys Glu Lys Leu Gln Glu Arg
355	360	365
Leu Ala Lys Leu Ser	Gly Gly Val Ala Val	Ile Arg Val Gly Ala Ala
370	375	380
Thr Glu Ile Glu Met	Lys Glu Lys Lys Asp	Arg Val Asp Asp Ala Gln
385	390	395
His Ala Thr Ile Ala	Ala Val Glu Glu Gly	Ile Leu Pro Gly Gly Gly
405	410	415
Thr Ala Leu Val Arg	Cys Ile Pro Thr	Leu Glu Ala Phe Leu Pro Met
420	425	430
Leu Ala Asn Glu Asp	Glu Ala Ile Gly	Thr Arg Ile Ile Leu Lys Ala
435	440	445
Leu Thr Ala Pro Leu	Lys Gln Ile Ala Ser	Asn Ala Gly Lys Glu Gly
450	455	460
Ala Ile Ile Cys Gln	Gln Val Leu Ala Arg	Ser Ala Asn Glu Gly Tyr
465	470	475
Asp Ala Leu Arg Asp	Ala Tyr Thr Asp	Met Ile Asp Ala Gly Ile Leu
485	490	495
Asp Pro Thr Lys Val	Thr Arg Ser Ala	Leu Glu Ser Ala Ala Ser Ile
500	505	510
Ala Gly Leu Leu Thr	Thr Glu Ala Leu Ile	Ala Asp Ile Pro Glu
515	520	525
Glu Lys Ser Ser Ser	Ala Pro Ala Met	Pro Ser Ala Gly Met Asp Tyr
530	535	540

<210>154

<211>102

<212>PRT

<213>Chlamydia pneumoniae

<400>154

Met Ser Asp Gln Ala	Thr Thr Leu Arg	Ile Lys Pro Leu	Gly Asp Arg
1	5	10	15
Ile Leu Val Lys Arg	Glu Glu Glu Glu	Ala Thr Ala Arg	Gly Gly Ile
20	25	30	
Ile Leu Pro Asp Thr	Ala Lys Arg Lys	Gln Asp Arg Ala	Glu Val Leu
35	40	45	
Val Leu Gly Thr Gly	Lys Arg Thr Asp	Asp Gly Thr Leu	Leu Pro Phe
50	55	60	
Glu Val Gln Val Gly	Asp Ile Ile Leu	Met Asp Lys Tyr	Ala Gly Gln
65	70	75	80
Glu Ile Thr Ile Asp	Asp Glu Glu Tyr	Val Ile Leu Gln	Ser Ser Glu
85	90	95	
Ile Met Ala Val Leu	Lys		
100			

<210>155

<211>617

<212>PRT

<213>Chlamydia pneumoniae

<400>155

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Lys Gly Val Pro Ser Leu Met Thr Thr Glu Leu Lys Thr Glu Ala Leu
 1          5          10          15
Pro Thr Arg Thr Gln Val Asp Pro Lys His Cys Trp Asp Thr Thr Leu
          20          25          30
Met Tyr Ala Asn Arg Glu Glu Trp Lys Lys Asp Phe Asp Leu Cys Ser
          35          40          45
Ser Gly Lys Asp Arg Ser Pro Ile Trp Pro Glu Phe Ser Pro Ser His
 50          55          60
Tyr Gln Ile Asp Asn Pro Glu Ser Leu Leu Glu Leu Leu Ser Lys Lys
 65          70          75          80
Phe Ser Val Glu Arg Lys Leu Asp Gln Leu Tyr Ile Tyr Ala His Leu
          85          90          95
Ile His Asp Gln Asp Ile Thr Asn Pro Glu Gly Glu Ser Asp Tyr Gln
          100          105          110
Ser Ile Val Tyr Leu Tyr Thr Leu Phe Ser Gln Glu Ile Ser Trp Ile
          115          120          125
Gln Pro Ala Xaa Ile Ala Leu Ser Glu Glu Lys Val Ala Ala Leu Leu
          130          135          140
Ser Ser Ser Val Leu Ala Pro Tyr Arg Phe Tyr Leu Glu Lys Ile Phe
145          150          155          160
Arg Leu Ser Pro His Thr Gly Thr Ala Asn Glu Glu Lys Ile Leu Ala
          165          170          175
Ser Ser Phe Ala Ala Leu Asn Val Ser Asn Lys Ala Phe Ser Ser Leu
          180          185          190
Ser Asp Ala Glu Ile Pro Phe Gly Ile Ala Lys Asp Ser Asn Gly Glu
          195          200          205
Glu His Pro Leu Ser His Ala Leu Ala Ser Leu Tyr Met Gln Ser Pro
          210          215          220
Asp Gln Glu Leu Arg Arg Thr Ala Tyr Leu Ala Gln Phe Gln Arg Tyr
225          230          235          240
Tyr Asp Tyr Arg Asn Thr Phe Ala Asn Leu Leu Asn Gly Lys Val Gln
          245          250          255
Ala His Leu Phe Glu Ala Lys Ala Arg Asn Tyr Pro Ser Cys Leu Glu
          260          265          270
Ala Ser Leu Phe Gln His Asn Ile Pro Thr Thr Val Tyr Ile Asn Leu
          275          280          285
Ile Asn Glu Thr Lys Lys His Thr Ser Leu Ile Asn Arg Tyr Phe Asn
          290          295          300
Leu Lys Lys Glu Ala Leu Asn Leu Lys Glu Phe His Phe Tyr Asp Val
305          310          315          320
Tyr Ala Pro Ile Ser Gln Thr Thr Ser Lys Asn Tyr Ser Tyr Glu Glu
          325          330          335
Gly Val Asp Leu Val Cys Lys Ser Leu Leu Pro Leu Gly Thr His Tyr
          340          345          350
Val Glu Ile Leu Arg Asn Gly Leu Leu Ser Asn Arg Trp Val Asp Arg
          355          360          365
Tyr Glu Asn Lys His Lys Arg Ser Gly Ala Tyr Ser Ser Gly Cys Tyr
          370          375          380
Asp Ser Ala Pro Tyr Ile Leu Leu Asn Tyr Thr Asn Thr Leu Tyr Asp
385          390          395          400
Val Ser Val Ile Ala His Glu Ala Gly His Ser Met His Ser Tyr Phe
          405          410          415
Ser Arg Glu Ala Gln Pro Tyr His Asp Ala Gln Tyr Pro Leu Phe Leu
          420          425          430
Ala Glu Ile Ala Ser Thr Phe Asn Glu Met Leu Leu Met Glu Ala Leu
          435          440          445
Ser Lys Ser Asp Gln Ser Lys Glu Asp Lys Ile Val Ile Ile Thr Lys
          450          455          460
Thr Leu Asp Thr Ile Phe Ala Thr Leu Phe Arg Gln Thr Phe Phe Ala
465          470          475          480
Ala Phe Glu Tyr Glu Ile His Ser Ala Ala Glu Gln Gly Thr Pro Leu
          485          490          495
Thr Glu Glu Phe Leu Ser Ala Thr Tyr Gly Asn Leu Gln Lys Glu Phe

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500 505
 Tyr Gly Gly Val Val Thr Ser Asp Ser Leu Ser Ala Leu Glu Trp Ala
 515 520 525
 Arg Ile Pro His Phe Tyr Tyr Asn Phe Tyr Val Tyr Gln Tyr Ala Thr
 530 535 540
 Gly Ile Ile Ala Ala Leu Ser Phe Ala Glu Lys Xaa Leu Thr Gln Glu
 545 550 555 560
 Pro Gly Ala Leu Glu Leu Tyr Leu Lys Phe Leu Lys Ser Gly Arg Ser
 565 570 575
 Asp Phe Pro Leu Asn Ile Leu Lys Lys Ser Gly Leu Asp Met Thr Thr
 580 585 590
 Ser Ala Pro Leu Asp Lys Ala Phe Ala Phe Ile Thr Lys Lys Ile Asp
 595 600 605
 Leu Leu Ser Ser Leu Leu Ser Glu Asp
 610 615

<210>156

<211>251

<212>PRT

<213>Chlamydia pneumoniae

<400>156

Met Asn Val Ala Asp Leu Leu Ser His Leu Glu Thr Leu Leu Ser Ser
 1 5 10 15
 Lys Ile Phe Gln Asp Tyr Gly Pro Asn Gly Leu Gln Val Gly Asp Pro
 20 25 30
 Gln Thr Pro Val Lys Lys Ile Ala Val Ala Val Thr Ala Asp Leu Glu
 35 40 45
 Thr Ile Lys Gln Ala Val Ala Glu Ala Asn Val Leu Ile Val His
 50 55 60
 His Gly Ile Phe Trp Lys Gly Met Pro Tyr Pro Ile Thr Gly Met Ile
 65 70 75 80
 His Lys Arg Ile Gln Leu Leu Ile Glu His Asn Ile Gln Leu Ile Ala
 85 90 95
 Tyr His Leu Pro Leu Asp Ala His Pro Thr Leu Gly Asn Asn Trp Arg
 100 105 110
 Val Ala Leu Asp Leu Asn Trp His Asp Leu Lys Pro Phe Gly Ser Ser
 115 120 125
 Leu Pro Tyr Leu Gly Val Gln Gly Ser Phe Ser Pro Ile Asp Ile Asp
 130 135 140
 Ser Phe Ile Asp Leu Leu Ser Arg Tyr Tyr Gln Ala Pro Leu Lys Gly
 145 150 155 160
 Ser Ala Leu Gly Gly Pro Ser Arg Val Ser Ser Ala Ala Leu Ile Ser
 165 170 175
 Gly Gly Ala Tyr Arg Glu Leu Ser Ser Ala Ala Thr Ser Gln Val Asp
 180 185 190
 Cys Phe Ile Thr Gly Asn Phe Asp Glu Pro Ala Trp Ser Thr Ala Leu
 195 200 205
 Glu Ser Asn Ile Asn Phe Leu Ala Phe Gly His Thr Ala Thr Glu Lys
 210 215 220
 Val Gly Pro Lys Ser Leu Ala Glu His Leu Lys Ser Glu Phe Pro Ile
 225 230 235 240
 Ser Thr Thr Phe Ile Asp Ala Ala Asn Pro Phe
 245 250

<210>157

<211>449

<212>PRT

<213>Chlamydia pneumoniae

<400>157

Met Trp Lys Leu Thr Lys Arg Asn Ser Met Leu Asn Cys Ser Asn Gln
 1 5 10 15
 Lys His Thr Val Thr Phe Glu Glu Ala Cys Gln Val Phe Pro Gly Gly
 20 25 30
 Val Asn Ser Pro Val Arg Ala Cys Arg Ser Val Gly Val Thr Pro Pro
 35 40 45
 Ile Val Ser Ser Ala Gln Gly Asp Ile Phe Leu Asp Thr His Gly Arg

Xaa

Ser	Leu	Leu	Leu	Asn	Ile	Asn	Gln	Gly	Val	Phe	Ala	Arg	Ser	Val	Ile
1				5					10					15	
Leu	Leu	Cys	Glu	His	Ser	Leu	Asn	Gly	Ser	Phe	Gly	Leu	Ile	Leu	Asn
			20					25					30		
Lys	Thr	Leu	Gly	Phe	Glu	Ile	Ser	Asp	Asp	Ile	Phe	Thr	Phe	Glu	Lys
		35					40					45			
Val	Ser	Asn	His	Asn	Ile	Arg	Phe	Cys	Xaa	Gly	Gly	Pro	Leu	Gln	Ala
50					55						60				

Asn Gln Met Met Leu His Ser Cys Ser Glu Ile Pro Gln Thr
 65 70 75 80
 Leu Glu Ile Cys Pro Ser Val Tyr Leu Gly Asp Leu Pro Phe Leu
 85 90 95
 Gln Glu Ile Ala Ser Ser Glu Ser Gly Pro Glu Ile Asn Leu Cys Phe
 100 105 110
 Gly Tyr Ser Gly Trp Gln Ala Gly Gln Leu Glu Lys Glu Phe Leu Ser
 115 120 125
 Asn Asp Trp Phe Leu Ala Pro Gly Asn Lys Asp Tyr Val Phe Tyr Ser
 130 135 140
 Glu Pro Glu Asp Leu Trp Ala Leu Val Leu Lys Asp Leu Gly Gly Lys
 145 150 155 160
 Tyr Ala Ser Leu Ser Thr Val Pro Asp Asn Leu Leu Leu Asn
 165 170

<210>159

<211>124

<212>PRT

<213>Chlamydia pneumoniae

<400>159

Met Ser Leu Glu Lys Glu Leu Leu Glu Glu Thr Pro Leu Val Leu Leu
 1 5 10 15
 Asn Phe Tyr Lys Leu Val Ser Phe Cys Asn Tyr Ala Gly Met Ile Leu
 20 25 30
 Gly Thr Glu Glu Lys Lys Phe Ala Ile Tyr Gly His Val Ser Met Gly
 35 40 45
 Gln Ala Phe Gln Gly Ala Asp Thr Glu Gly His Ser Pro Gln Arg Pro
 50 55 60
 Phe Ala His Asp Leu Leu Asn Phe Val Phe Ser Gly Phe Asp Ile Gln
 65 70 75 80
 Val Leu Arg Val Val Ile Asn Asp Tyr Lys Asp Asn Val Phe Tyr Thr
 85 90 95
 Arg Leu Phe Leu Glu Gln Lys Asp Arg Glu Phe Leu Tyr Val Val Asp
 100 105 110
 Val Asp Ala Arg Pro Ser Asp Arg Ser Leu Ser Pro
 115 120

<210>160

<211>140

<212>PRT

<213>Chlamydia pneumoniae

<400>160

Ser Arg Pro Ser Ile Ala Asp Asp Gln Arg Trp Trp Arg Thr Phe Phe
 1 5 10 15
 Arg Glu Lys Ile Leu Leu Arg Ala Ala Lys Arg Ser Ile Ile Leu Val
 20 25 30
 Asp Glu Ser Lys Leu Val Pro Val Leu Gly Lys Phe Arg Val Pro Leu
 35 40 45
 Glu Ile Ser Arg Phe Gly Arg Ser Ala Ile Ile Glu Glu Ile Arg His
 50 55 60
 Leu Gly Tyr Glu Gly Glu Trp Arg Leu Gln Asp Thr Gly Asp Leu Phe
 65 70 75 80
 Ile Thr Asp Ser Ser Asn Tyr Ile Tyr Asp Ile Phe Ser Pro Asn Ser
 85 90 95
 Tyr Pro Asn Pro Glu Lys Asp Leu Leu Lys Leu Ile Gln Ile His Gly
 100 105 110
 Val Ile Glu Val Gly Phe Val Ile Glu Lys Val Glu Val Trp Ser Ser
 115 120 125
 Asn Ser Gln Gly Leu Ile Ser Lys Lys Tyr Ser Val
 130 135 140

<210>161

<211>112

<212>PRT

<213>Chlamydia pneumoniae

<400>161

Val Glu Lys Asp Leu His Leu His Glu Lys Lys Cys Leu Ala His Glu

1 10 15
 Ala Ala Thr Gln Val Thr Ser Gly Met Ile Leu Gly Leu Gly Ser Gly
 20 25 30
 Ser Thr Ala Lys Glu Phe Ile Phe Ala Leu Ala His Arg Ile Gln Thr
 35 40 45
 Glu Ser Leu Ala Val His Ala Ile Ala Ser Ser Gln Asn Ser Tyr Ala
 50 55 60
 Leu Ala Lys Gln Leu Ala Ile Pro Leu Leu Asn Pro Glu Lys Phe Ser
 65 70 75 80
 Ser Leu Asp Leu Thr Val Asp Gly Ala Asp Glu Val Asp Pro Gln Leu
 85 90 95
 Arg Met Ile Lys Gly Gly Gly Gly Pro Phe Ser Glu Lys Arg Phe Phe
 100 105 110
 <210>162
 <211>378
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>162
 Arg Arg Thr Ile Met Asn Thr Ser Leu Lys Arg Pro Leu Lys Ser His
 1 5 10 15
 Phe Asp Val Val Gly Ser Phe Leu Arg Pro Glu His Leu Lys Lys Thr
 20 25 30
 Arg Glu Ser Leu Lys Glu Gly Ser Ile Ser Leu Asp Gln Leu Met Gln
 35 40 45
 Ile Glu Asp Ile Ala Ile Gln Asp Leu Ile Lys Lys Gln Lys Ala Ala
 50 55 60
 Gly Leu Ser Phe Ile Thr Asp Gly Glu Phe Arg Arg Ala Thr Trp His
 65 70 75 80
 Tyr Asp Phe Met Trp Gly Phe His Gly Val Gly His His Arg Ala Thr
 85 90 95
 Glu Gly Val Phe Phe Asp Gly Glu Arg Ala Met Ile Asp Asp Thr Tyr
 100 105 110
 Leu Thr Asp Lys Ile Ser Val Ser His His Pro Phe Val Asp His Phe
 115 120 125
 Lys Phe Val Lys Ala Leu Glu Asp Glu Phe Thr Thr Ala Lys Gln Thr
 130 135 140
 Leu Pro Ala Pro Ala Gln Phe Leu Lys Gln Met Ile Phe Pro Asn Asn
 145 150 155 160
 Ile Glu Val Thr Arg Lys Phe Tyr Pro Thr Asn Gln Glu Leu Ile Glu
 165 170 175
 Asp Ile Val Ala Gly Tyr Arg Lys Val Ile Arg Asp Leu Tyr Asp Ala
 180 185 190
 Gly Cys Arg Tyr Leu Gln Leu Asp Asp Cys Thr Arg Gly Gly Leu Val
 195 200 205
 Asp Pro Arg Val Cys Ser Trp Tyr Gly Ile Asp Glu Lys Gly Leu Gln
 210 215 220
 Asp Leu Ile Gln Gln Tyr Leu Leu Ile Asn Asn Leu Val Ile Ala Asp
 225 230 235 240
 Arg Pro Asp Asp Leu Val Val Asn Leu His Val Cys Arg Gly Asn Tyr
 245 250 255
 His Ser Lys Phe Phe Ala Ser Gly Ser Tyr Asp Phe Ile Ala Lys Pro
 260 265 270
 Leu Phe Glu Gln Thr Asn Val Asp Gly Tyr Tyr Leu Glu Phe Asp His
 275 280 285
 Glu Arg Ser Gly Asp Phe Ser Pro Leu Thr Phe Ile Ser Gly Glu Lys
 290 295 300
 Thr Val Cys Leu Gly Leu Val Thr Ser Lys Thr Pro Thr Leu Glu Asn
 305 310 315 320
 Lys Asp Glu Val Ile Ala Arg Ile His Gln Ala Ala Asp Tyr Leu Pro
 325 330 335
 Leu Glu Arg Leu Ser Leu Ser Pro Gln Cys Gly Phe Ala Ser Cys Glu
 340 345 350
 Ile Gly Asn Lys Leu Thr Glu Glu Gln Trp Ala Lys Val Ala Leu
 355 360 365

Val Lys Glu Ile Ser Glu Val Trp Lys
 370 375
 <210>163
 <211>872
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>163
 Val Leu Gly Val Asn Phe Met Glu Lys Phe Ser Asp Ala Val Ser Glu
 1 5 10 15
 Ala Leu Glu Lys Ala Phe Glu Leu Ala Lys Ser Ser Lys His Thr Tyr
 20 25 30
 Val Thr Glu Asn His Leu Leu Leu Ala Leu Leu Glu Asn Thr Glu Ser
 35 40 45
 Leu Phe Tyr Leu Val Ile Lys Asp Ile His Gly Asn Pro Gly Leu Leu
 50 55 60
 Asn Thr Ala Val Lys Asp Ala Leu Ser Arg Glu Pro Thr Val Val Glu
 65 70 75 80
 Gly Glu Val Asp Pro Lys Pro Ser Pro Gly Leu Gln Thr Leu Leu Arg
 85 90 95
 Asp Ala Lys Gln Glu Ala Lys Thr Leu Gly Asp Glu Tyr Ile Ser Gly
 100 105 110
 Asp His Leu Leu Leu Ala Phe Trp Ser Ser Asn Lys Glu Pro Phe Asn
 115 120 125
 Ser Trp Lys Gln Thr Thr Lys Val Ser Phe Lys Asp Leu Lys Asn Leu
 130 135 140
 Ile Thr Lys Ile Arg Arg Gly Asn Arg Met Asp Ser Pro Ser Ala Glu
 145 150 155 160
 Ser Asn Phe Gln Gly Leu Glu Lys Tyr Cys Lys Asn Leu Thr Ala Leu
 165 170 175
 Ala Arg Glu Gly Lys Leu Asp Pro Val Ile Gly Arg Asp Glu Glu Ile
 180 185 190
 Arg Arg Thr Ile Gln Val Leu Ser Arg Arg Thr Lys Asn Asn Pro Met
 195 200 205
 Leu Ile Gly Glu Pro Gly Val Gly Lys Thr Ala Ile Ala Glu Gly Leu
 210 215 220
 Ala Leu Arg Leu Ile Gln Gly Asp Val Pro Glu Ser Leu Lys Gly Lys
 225 230 235 240
 Gln Leu Tyr Val Leu Asp Met Gly Ala Leu Ile Ala Gly Ala Lys Tyr
 245 250 255
 Arg Gly Glu Phe Glu Glu Arg Leu Lys Ser Val Leu Lys Asp Val Glu
 260 265 270
 Ser Gly Asp Gly Glu His Ile Ile Phe Ile Asp Glu Val His Thr Leu
 275 280 285
 Val Gly Ala Gly Ala Thr Asp Gly Ala Met Asp Ala Ala Asn Leu Leu
 290 295 300
 Lys Pro Ala Leu Ala Arg Gly Thr Leu His Cys Ile Gly Ala Thr Thr
 305 310 315 320
 Leu Asn Glu Tyr Gln Lys Tyr Ile Glu Lys Asp Ala Ala Leu Glu Arg
 325 330 335
 Arg Phe Gln Pro Ile Phe Val Thr Glu Pro Ser Leu Glu Asp Ala Val
 340 345 350
 Phe Ile Leu Arg Gly Leu Arg Glu Lys Tyr Glu Ile Phe His Gly Val
 355 360 365
 Arg Ile Thr Glu Gly Ala Leu Asn Ala Ala Val Leu Leu Ser Tyr Arg
 370 375 380
 Tyr Ile Pro Asp Arg Phe Leu Pro Asp Lys Ala Ile Asp Leu Ile Asp
 385 390 395 400
 Glu Ala Ala Ser Leu Ile Arg Met Gln Ile Gly Ser Leu Pro Leu Pro
 405 410 415
 Ile Asp Glu Lys Glu Arg Glu Leu Ala Ala Leu Ile Val Lys Gln Glu
 420 425 430
 Ala Ile Lys Arg Glu Gln Ser Pro Ser Tyr Gln Glu Glu Ala Asp Ala
 435 440 445
 Met Gln Lys Ser Ile Asp Ala Leu Arg Glu Glu Leu Ala Ser Leu Arg

450 455 460
 Leu Gly Trp Asp Glu Glu Lys Lys Leu Ile Ser Gly Leu Lys Glu Lys
 465 470 475 480
 Lys Asn Ser Leu Glu Ser Met Lys Phe Ser Glu Glu Glu Ala Glu Arg
 485 490 495
 Val Ala Asp Tyr Asn Arg Val Ala Glu Leu Arg Tyr Ser Leu Ile Pro
 500 505 510
 Gln Leu Glu Glu Glu Ile Lys Gln Asp Glu Ala Ser Leu Asn Gln Arg
 515 520 525
 Asp Asn Arg Leu Leu Gln Glu Glu Val Asp Glu Arg Leu Ile Ala Gln
 530 535 540
 Val Val Ala Asn Trp Thr Gly Ile Pro Val Gln Lys Met Leu Glu Gly
 545 550 555 560
 Glu Ala Glu Lys Leu Leu Ile Leu Glu Glu Ser Leu Glu Glu Arg Val
 565 570 575
 Val Gly Gln Pro Phe Ala Val Ser Ala Val Ser Asp Ser Ile Arg Ala
 580 585 590
 Ala Arg Val Gly Leu Asn Asp Pro Gln Arg Pro Leu Gly Val Phe Leu
 595 600 605
 Phe Leu Gly Pro Thr Gly Val Gly Lys Thr Glu Leu Ala Lys Ala Leu
 610 615 620
 Ala Asp Leu Leu Phe Asn Lys Glu Glu Ala Met Val Arg Phe Asp Met
 625 630 635 640
 Ser Glu Tyr Met Glu Lys His Ser Ile Ser Lys Leu Ile Gly Ser Ser
 645 650 655
 Pro Gly Tyr Val Gly Tyr Glu Glu Gly Gly Ser Leu Ser Glu Ala Leu
 660 665 670
 Arg Arg Arg Pro Tyr Ser Val Val Leu Phe Asp Glu Ile Glu Lys Ala
 675 680 685
 Asp Lys Glu Val Leu Asn Ile Leu Leu Gln Val Phe Asp Asp Gly Ile
 690 695 700
 Leu Thr Asp Gly Lys Lys Arg Lys Val Asn Cys Lys Asn Ala Leu Phe
 705 710 715 720
 Ile Met Thr Ser Asn Ile Gly Ser Pro Glu Leu Ala Asp Tyr Cys Ser
 725 730 735
 Lys Lys Gly Ser Glu Leu Thr Lys Glu Ala Ile Leu Ser Val Val Ser
 740 745 750
 Pro Val Leu Lys Arg Tyr Leu Ser Pro Glu Phe Met Asn Arg Ile Asp
 755 760 765
 Glu Ile Leu Pro Phe Val Pro Leu Thr Lys Glu Asp Ile Val Lys Ile
 770 775 780
 Val Gly Ile Gln Met Arg Arg Ile Ala Gln Arg Leu Lys Ala Arg Arg
 785 790 795 800
 Ile Asn Leu Ser Trp Asp Asp Ser Val Ile Leu Phe Leu Ser Glu Gln
 805 810 815
 Gly Tyr Asp Ser Ala Phe Gly Ala Arg Pro Leu Lys Arg Leu Ile Gln
 820 825 830
 Gln Lys Val Val Ile Leu Leu Ser Lys Ala Leu Leu Lys Gly Asp Ile
 835 840 845
 Lys Pro Asp Thr Ser Ile Glu Leu Thr Met Ala Lys Glu Val Leu Val
 850 855 860
 Phe Lys Lys Val Glu Thr Pro Ser
 865 870
 <210>164
 <211>182
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>164
 Asn Cys Ala Ala Ser Phe Ile Trp Leu Asn Lys Ser Ser His Arg Asn
 1 5 10 15
 Leu Arg Ser Pro Met Phe Lys Ser Phe Ile Val Arg Tyr Met Phe Val
 20 25 30
 Gly Gly Leu Val Ser Phe Leu Leu Pro Ile Pro Asp Leu Glu Cys Ala
 35 40 45

Asn Asn Val Thr Lys Tyr Asp Lys Lys Ala Ser Val Ser Arg
 50 55 60
 Asp Leu Lys Leu Gln Glu Asp Cys Gln Lys Phe Trp Asn Leu Asp Pro
 65 70 75 80
 Tyr Lys Leu Glu Ser Leu Cys Ala Tyr Gln Val Leu Tyr His Asp Asp
 85 90 95
 Tyr Ser Ser Lys Arg Ile Arg Glu Leu Phe Pro Gln Ile Gln Lys Asp
 100 105 110
 Glu Val Pro Ile Phe Ala Thr Met Ile Leu Thr Leu Gly Lys Val Asp
 115 120 125
 Arg Gly Phe Ser Pro Glu Glu Ile Ser Leu Ile Gln Lys Leu Ser Tyr
 130 135 140
 Pro Gly Leu Ser Leu Ala Ser Leu Arg Gly Ser Thr Glu Ile Arg Pro
 145 150 155 160
 Glu Tyr Arg Phe Gly Ser Cys Phe Ser Ser Val Gly Val Phe Trp Arg
 165 170 175
 Phe Arg Glu Glu Pro Ser
 180

<210>165

<211>399

<212>PRT

<213>Chlamydia pneumoniae

<400>165

Glu Gly Leu Gln Lys Leu Asp Pro Asn Thr Asp Leu Ala Arg Ala Leu
 1 5 10 15
 Val Val Ser Glu Phe Ser Gly Asp Leu Gly Lys Asn Arg Ala Asp Tyr
 20 25 30
 Tyr Ser Asn Cys Leu Asp Ile Leu Ala Leu Arg Ile His Ala Glu Arg
 35 40 45
 Gln Arg Tyr Leu Asp Gln Ser Pro Cys Val Pro Gly Thr Ser Glu Phe
 50 55 60
 His Lys Ala Thr Ile Glu Ala Ile Asn Thr Ile Leu Phe Tyr Glu Glu
 65 70 75 80
 Ala Val Arg Tyr Pro Ser Lys Lys Glu Met Phe Ser Asp Glu Phe Ser
 85 90 95
 Phe Leu Ser Ser Val Thr Asp Arg Lys Phe Gly Val Cys Leu Gly Val
 100 105 110
 Ser Ser Leu Tyr Phe Ser Leu Ser Gln Arg Leu Asp Leu Pro Leu Glu
 115 120 125
 Ala Val Thr Pro Pro Gly His Ile Tyr Leu Arg Tyr Gln Gly Gly Glu
 130 135 140
 Val Asn Ile Glu Thr Thr Ala Gly Gly Arg His Leu Pro Thr Ala Ser
 145 150 155 160
 Tyr Cys Asp Cys Leu Asp Leu Glu Asp Leu Gln Val Arg Thr Pro Glu
 165 170 175
 Glu Met Ile Gly Leu Thr Phe Met Asn Gln Gly Ser Phe Ala Leu Gln
 180 185 190
 Lys Lys Lys Tyr Lys Glu Ala Glu Glu Ala Tyr Lys Lys Ala Gln Glu
 195 200 205
 Tyr Leu Gly Asp Glu Glu Leu Gln Glu Leu Leu Gly Phe Val Gln Ile
 210 215 220
 Leu Gly Gly Lys Lys Lys Glu Gly Lys Ser Leu Ile Gly Lys Ser Pro
 225 230 235 240
 Arg Ala Ser Gln Lys Gly Ser Val Ala Tyr Asp Tyr Leu Lys Gly Arg
 245 250 255
 Ile Asn Ile Pro Thr Leu Ala Leu Leu Phe Ser Tyr Pro Gly Ser Asn
 260 265 270
 Tyr Glu Glu Ile Ala Ser Tyr Glu Glu Glu Leu Lys Lys Ala Met Lys
 275 280 285
 Ser Ser Met Pro Cys Cys Glu Gly Gln Arg Arg Leu Ala Ser Val Ala
 290 295 300
 Phe His Leu Gly Lys Thr Ala Glu Ala Val Ala Leu Leu Glu Lys Cys
 305 310 315 320
 Val Glu Asp Ile Pro Asn Asp Leu Ser Leu His Leu Arg Leu Cys Lys

320 330 335
 Ile Leu Cys Asp Arg His Glu Tyr Thr Lys Ala Leu Lys Tyr Phe Ile
 340 345 350
 Ile Ala Glu Arg Leu Met Glu Asp Gln Gly Phe Leu Lys Lys Asp Asn
 355 360 365
 Arg Ser Phe Ala Leu Phe Tyr Glu Val Lys Lys Ile Ile Ser Lys Val
 370 375 380
 Ala Pro Gln Lys Ala Asn Thr Leu Leu Leu Met Glu Ser Glu Arg
 385 390 395
 <210>166
 <211>167
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>166
 Ile Ile Val Gly Ile Ser Met Ser Ser Ser Glu Val Val Phe Gln Thr
 1 5 10 15
 Val His Gly Leu Gly Phe Gly Gly Leu Ser Ser Lys Ser Val Val Pro
 20 25 30
 Phe Lys Lys Ser Leu Ser Asp Ala Pro Arg Val Val Cys Ser Ile Leu
 35 40 45
 Val Leu Thr Leu Gly Leu Gly Ala Leu Val Cys Gly Ile Ala Ile Thr
 50 55 60
 Cys Trp Cys Val Pro Gly Val Ile Leu Met Gly Gly Ile Cys Ala Ile
 65 70 75 80
 Val Leu Gly Ala Ile Ser Leu Ala Leu Ser Leu Phe Trp Leu Trp Gly
 85 90 95
 Leu Phe Ser Asn Cys Cys Gly Ser Lys Arg Val Leu Pro Gly Glu Gly
 100 105 110
 Leu Leu Arg Asp Lys Leu Leu Asp Gly Gly Phe Ser Arg Ala Ala Pro
 115 120 125
 Ser Gly Met Gly Leu Pro Gly Asp Gly Ser Pro Arg Ala Ser Thr Pro
 130 135 140
 Ser Cys Leu Glu Glu Leu Gln Ala Glu Ile Gln Ala Val Thr Gln Ala
 145 150 155 160
 Ile Asp Gln Met Ser Asp Asp
 165

<210>167

<211>145

<212>PRT

<213>Chlamydia pneumoniae

<400>167

Leu Pro Ala Pro Glu Leu Arg Ser Ser Trp Val Lys Gly Asp Pro Pro
 1 5 10 15
 Pro Arg Pro Ala Ser Pro Ala Thr Pro Pro Ser Arg Gly Gly Val Ala
 20 25 30
 Glu Phe Leu Ser Leu Gly Ser Pro Leu Phe Pro Gly Leu Gly Ile Ser
 35 40 45
 Ala Leu Gly Ile Leu Ser Ser Leu Lys Val Ile Ser Ile Ala Gln Ala
 50 55 60
 Asn Asn Ala Thr Pro Ser Ser Ile Val Ile Ala Pro Ala Ala Ile Pro
 65 70 75 80
 Lys Gly Gln Gln Pro Ala Arg Thr Thr Arg Pro Ser Pro Ser Lys Glu
 85 90 95
 Ile Ala Thr Thr Ala Met Ile Ala Ala Ile Thr Asp Leu Ala Ile Leu
 100 105 110
 Val Ala Leu Ser Ser Val Leu Asn Ala Gly Ile Ala Ser Leu Glu Gln
 115 120 125
 Phe Thr His Pro Thr Asp Val Ala Ala Asp Val Thr Ala Ser Phe Ile
 130 135 140

Asp

145

<210>168

<211>538

<212>PRT

<213>Chlamydia pneumoniae

<400>168

Gly Lys Trp Trp Arg Val Ser Ser Met Glu Ser Glu Lys Asp Ile Gly
 1 5 10 15
 Ala Lys Phe Leu Gly Asp Tyr Arg Ile Leu Tyr Arg Lys Gly Gln Ser
 20 25 30
 Leu Trp Ser Glu Asp Leu Leu Ala Glu His Arg Phe Ile Lys Lys Arg
 35 40 45
 Tyr Leu Ile Arg Leu Leu Leu Pro Asp Leu Gly Ser Ser Gln Pro Phe
 50 55 60
 Met Glu Ala Phe His Asp Val Val Val Lys Leu Ala Lys Leu Asn His
 65 70 75 80
 Pro Gly Ile Leu Ser Ile Glu Asn Val Ser Glu Ser Glu Gly Arg Cys
 85 90 95
 Phe Leu Val Thr Gln Glu Gln Asp Ile Pro Ile Leu Ser Leu Thr Gln
 100 105 110
 Tyr Leu Lys Ser Ile Pro Arg Lys Leu Thr Glu Leu Glu Ile Val Asp
 115 120 125
 Ile Val Ser Gln Leu Ala Ser Leu Leu Asp Tyr Val His Ser Glu Gly
 130 135 140
 Leu Ala Gln Glu Glu Trp Asn Leu Asp Ser Val Tyr Ile His Ile Leu
 145 150 155 160
 Asn Gly Val Pro Lys Val Ile Leu Pro Asp Leu Gly Phe Ala Ser Leu
 165 170 175
 Ile Lys Glu Arg Ile Leu Asp Gly Phe Ile Ser Asp Glu Glu Asn Arg
 180 185 190
 Glu Ser Lys Ile Lys Glu Arg Val Leu Leu His Thr Ser Glu Gly Lys
 195 200 205
 Gln Gly Arg Glu Asp Thr Tyr Ala Phe Gly Ala Ile Thr Tyr Tyr Leu
 210 215 220
 Leu Phe Gly Phe Leu Pro Gln Gly Ile Phe Pro Met Pro Ser Lys Val
 225 230 235 240
 Phe Ser Asp Phe Ile Tyr Asp Trp Asp Phe Leu Ile Ser Ser Cys Leu
 245 250 255
 Ser Cys Phe Met Glu Glu Arg Ala Lys Glu Leu Phe Pro Leu Ile Arg
 260 265 270
 Lys Lys Thr Leu Gly Glu Glu Leu Gln Asn Val Val Thr Asn Cys Ile
 275 280 285
 Glu Ser Ser Leu Arg Glu Val Pro Asp Pro Leu Glu Ser Ser Gln Asn
 290 295 300
 Leu Pro Gln Ala Val Leu Lys Val Gly Glu Thr Lys Val Ser His Gln
 305 310 315 320
 Gln Lys Glu Ser Ala Glu His Leu Glu Phe Val Leu Val Glu Ala Cys
 325 330 335
 Ser Ile Asp Glu Ala Met Asp Thr Ala Ile Glu Ser Glu Ser Ser Ser
 340 345 350
 Gly Val Glu Glu Glu Gly Tyr Ser Leu Ala Leu Gln Ser Leu Leu Val
 355 360 365
 Arg Glu Pro Val Val Ser Arg Tyr Val Glu Ala Glu Lys Glu Glu Pro
 370 375 380
 Lys Pro Gln Pro Ile Leu Thr Glu Met Val Leu Ile Glu Gly Gly Glu
 385 390 395 400
 Phe Ser Arg Gly Ser Val Glu Gly Gln Arg Asp Glu Leu Pro Val His
 405 410 415
 Lys Val Ile Leu His Ser Phe Phe Leu Asp Val His Pro Val Thr Asn
 420 425 430
 Glu Gln Phe Asn Arg Tyr Leu Glu Cys Cys Gly Ser Glu Gln Asp Lys
 435 440 445
 Tyr Tyr Asn Glu Leu Ile Arg Leu Arg Asp Ser Arg Ile Gln Arg Arg
 450 455 460
 Ser Gly Arg Leu Val Ile Glu Pro Gly Tyr Ala Lys His Pro Val Val
 465 470 475 480
 Gly Val Thr Trp Tyr Gly Ala Ser Gly Tyr Ala Glu Trp Ile Gly Lys
 485 490 495

Arg Leu Pro Thr Ala Glu Trp Glu Ile Ala Ala Ser Gly Gly Val
 500 505 510
 Ala Cys Tyr Ala Ile Pro Val Gly Arg Lys Ser Lys Lys Ala Gly Gln
 515 520 525
 Ile Phe Ser Leu Arg Ile Arg Gln Gln Ser
 530 535
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 <211>662
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>169
 Met Lys Glu Glu Asn Ser Gln Ala His Tyr Leu Ala Leu Cys Arg Glu
 1 5 10 15
 Leu Glu Asp His Asp Tyr Ser Tyr Tyr Val Leu His Arg Pro Arg Ile
 20 25 30
 Ser Asp Tyr Glu Tyr Asp Met Lys Leu Arg Lys Leu Leu Glu Ile Glu
 35 40 45
 Arg Ser His Pro Glu Trp Lys Val Leu Trp Ser Pro Ser Thr Arg Leu
 50 55 60
 Gly Asp Arg Pro Ser Gly Thr Phe Ser Val Val Ser His Lys Glu Pro
 65 70 75 80
 Met Leu Ser Ile Ala Asn Ser Tyr Ser Lys Glu Glu Leu Ser Glu Phe
 85 90 95
 Phe Ser Arg Val Glu Lys Ser Leu Gly Thr Ser Pro Arg Tyr Thr Val
 100 105 110
 Glu Leu Lys Ile Asp Gly Ile Ala Val Ala Ile Arg Tyr Glu Asp Arg
 115 120 125
 Val Leu Val Gln Ala Leu Ser Arg Gly Asn Gly Lys Gln Gly Glu Asp
 130 135 140
 Ile Thr Ser Asn Ile Arg Thr Ile Arg Ser Leu Pro Leu Arg Leu Pro
 145 150 155 160
 Glu Asp Ala Pro Glu Phe Ile Glu Val Arg Gly Glu Val Phe Phe Ser
 165 170 175
 Tyr Ser Thr Phe Gln Ile Ile Asn Glu Lys Gln Gln Gln Leu Glu Lys
 180 185 190
 Thr Ile Phe Ala Asn Pro Arg Asn Ala Ala Gly Gly Thr Leu Lys Leu
 195 200 205
 Leu Ser Pro Gln Glu Ser Arg Lys Arg Lys Leu Glu Ile Ser Ile Tyr
 210 215 220
 Asn Leu Ile Ala Pro Gly Asp Asn Asp Ser His Tyr Glu Asn Leu Gln
 225 230 235 240
 Arg Cys Leu Glu Trp Gly Phe Pro Val Ser Gly Lys Pro Arg Leu Cys
 245 250 255
 Ser Thr Pro Glu Glu Val Ile Ser Val Leu Lys Thr Ile Glu Thr Glu
 260 265 270
 Arg Ala Ser Leu Pro Met Glu Ile Asp Gly Ala Val Ile Lys Val Asp
 275 280 285
 Ser Leu Ala Ser Gln Arg Val Leu Gly Ala Thr Gly Lys His Tyr Arg
 290 295 300
 Trp Ala Leu Ala Tyr Lys Tyr Ala Pro Glu Glu Ala Glu Thr Leu Leu
 305 310 315 320
 Glu Asp Ile Leu Val Gln Val Gly Arg Thr Gly Val Leu Thr Pro Val
 325 330 335
 Ala Lys Leu Thr Pro Val Leu Leu Ser Gly Ser Leu Val Ser Arg Ala
 340 345 350
 Ser Leu Tyr Asn Glu Asp Glu Ile His Arg Lys Asp Ile Arg Ile Gly
 355 360 365
 Asp Thr Val Cys Val Ala Lys Gly Gly Glu Val Ile Pro Lys Val Val
 370 375 380
 Arg Val Cys Arg Glu Lys Arg Pro Glu Gly Ser Glu Val Trp Asn Met
 385 390 395 400
 Pro Glu Phe Cys Pro Val Cys His Ser His Val Val Arg Glu Glu Asp
 405 410 415
 Arg Val Ser Val Arg Cys Val Asn Pro Glu Cys Val Ala Gly Ala Ile

420 425
 Glu Lys Ile Arg Phe Phe Val Gly Arg Gly Ala Leu Asn Ile Asp His
 435 440 445
 Leu Gly Val Lys Val Ile Thr Lys Leu Phe Glu Leu Gly Leu Val His
 450 455 460
 Thr Cys Ala Asp Leu Phe Gln Leu Thr Thr Glu Asp Leu Met Gln Ile
 465 470 475 480
 Pro Gly Ile Arg Glu Arg Ser Ala Arg Asn Ile Leu Glu Ser Ile Glu
 485 490 495
 Gln Ala Lys His Val Asp Leu Asp Arg Phe Leu Val Ala Leu Gly Ile
 500 505 510
 Pro Leu Ile Gly Ile Gly Val Ala Thr Val Leu Ala Gly His Phe Glu
 515 520 525
 Thr Leu Asp Arg Val Ile Ser Ala Thr Phe Glu Glu Leu Leu Ser Leu
 530 535 540
 Glu Gly Ile Gly Glu Lys Val Ala His Ala Ile Ala Glu Tyr Phe Ser
 545 550 555 560
 Asp Ser Thr His Leu Asn Glu Ile Lys Lys Met Gln Asp Leu Gly Val
 565 570 575
 Cys Ile Ser Pro Tyr His Lys Ser Gly Ser Thr Cys Phe Gly Lys Ala
 580 585 590
 Phe Val Ile Thr Gly Thr Leu Glu Gly Met Ser Arg Leu Asp Ala Glu
 595 600 605
 Thr Ala Ile Arg Asn Cys Gly Gly Lys Val Gly Ser Ser Val Ser Lys
 610 615 620
 Gln Thr Asp Tyr Val Val Met Gly Asn Asn Pro Gly Ser Lys Leu Glu
 625 630 635 640
 Lys Ala Arg Lys Leu Gly Val Ser Ile Leu Asp Gln Glu Ala Phe Thr
 645 650 655
 Asn Leu Ile His Leu Glu
 660

<210>170



<211>441

<212>PRT

<213>Chlamydia pneumoniae

<400>170

Ile Ile Tyr Tyr Lys Phe Phe Tyr Ser Tyr Asn Cys Pro Tyr Phe Ile
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 Ser Phe Phe Val Leu Leu Gly Val Asn Met Ala Ser Ser Ser Asn Asn
 20 25 30
 Ser Thr Lys Gln Asp Gly Ile Pro Ser Trp Val Asn Pro Asn Val Gln
 35 40 45
 Trp Asn Arg Ala Ser Gln Val Gly Asp Gln Glu Ala Asn Ser Leu Thr
 50 55 60
 Pro Glu Ala Gln Thr Ser Arg Ser Trp Phe Ser Asp Arg Lys His Phe
 65 70 75 80
 Leu Glu Val Leu Asp Val Ser Leu Glu Glu Met Glu Asn Asn Asp Leu
 85 90 95
 Lys Lys Tyr Ser Arg Tyr Lys Thr Ile Ile Leu Ile Ala Thr Leu Val
 100 105 110
 Thr Val Ala Ile Thr Cys Ile Val Pro Ile Ser Met Val Phe Gly Ile
 115 120 125
 Pro Met Trp Val Pro Cys Leu Ile Leu Phe Gly Ala Gly Leu Ser Ser
 130 135 140
 Ala Phe Leu Ser His Arg Leu Gln Ser Lys Cys Lys Glu Ile His Leu
 145 150 155 160
 Arg Tyr Arg Ala Tyr Gln Ile Tyr Arg Gln Gln Leu Leu Ser Gln Tyr
 165 170 175
 Pro Asp Leu Arg Lys Ser Thr Leu Tyr Lys Tyr Ser Ile Thr His Val
 180 185 190
 Lys Pro Lys Lys Gly Phe Val Gly Lys Leu Val Glu Asn Leu Arg Pro
 195 200 205
 Asp Leu His Lys Asn Lys Asp Asp Gly Gly Ala Ala Ala Asp Ser Arg
 210 215 220

Leu Asp Phe Ala Gly  Gly Val Lys His Tyr Gln Thr  Ala Leu
 225 230 235 240
 Leu Gly Val Ser Gly Val Asn Ser Val Glu Trp Gln Arg Leu Ala Ser
 245 250 255
 Leu Ile Met Ser Val Lys Asn Asp Ile Leu Asn Asp Val Gly Ser Arg
 260 265 270
 Glu Pro Ile Asp Lys Ala Gln Arg Ser Ala Leu Val Val Ser Gly Lys
 275 280 285
 Asp Ile Gly Gly Glu Ile Gln Pro Gly Gly Ile Leu Asp Ile Ser Arg
 290 295 300
 Asp Ile Leu Ala Ile Cys Gly Tyr Gly Met Asn Val Gly Val Glu Ala
 305 310 315 320
 Lys Lys Ala Ile Asp Gln Tyr Lys Lys Trp Tyr Leu Asn Ser Ser Thr
 325 330 335
 Phe Ile Ala Trp Asn Pro Gln Leu Pro Ala Ile Ala Gln Ser Tyr Leu
 340 345 350
 Leu Glu Gln Gln Arg His Leu Asp Tyr Ala Ala Lys Ile Phe Gln Asp
 355 360 365
 Leu Ser Ala Leu Thr Thr Ala His Gly Thr Gly Gln Ala Leu Glu Asp
 370 375 380
 Leu Asp Ser Leu Leu Cys Tyr Tyr Asp Gln Leu Ile Glu Ser Lys Gly
 385 390 395 400
 Val Gly Glu Lys Ile Ile Ala Ser Ile His Gln Lys Ala Ser Arg Leu
 405 410 415
 Ser Asn Ala Arg Phe Leu Arg Ser Gly Thr Phe Lys Glu Met Val Glu
 420 425 430
 Ser Ile Pro Arg Val Phe Asn Tyr Tyr
 435 440

<210>171

<211>1156

<212>PRT

<213>Chlamydia pneumoniae

<400>171

His Arg Phe Thr Arg Lys His Leu Asp Leu Ala Met Gln Asp Ser Cys
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 Asp Gln Glu His Leu Lys Lys Trp Ser Asn Leu Tyr His Val Phe Ser
 20 25 30
 Ile Thr Ile Lys Glu Phe Thr Glu Gly Lys Leu Glu Gln Asn Glu Val
 35 40 45
 Val Ser Arg Ile Gln Arg Leu Arg Gly Lys Leu Glu Lys Ser Lys Cys
 50 55 60
 Ser Ile Leu Gly Asn Cys Arg Thr Asn Ala Glu Tyr Ala Thr Lys Ser
 65 70 75 80
 Glu Lys Lys Leu Ala Asp Tyr Leu Leu Gln Ile Gly Asp Arg Glu Pro
 85 90 95
 Phe Leu Thr Gly Met His Lys Ala Ile Ala Thr Gly Lys Ala Ile Gln
 100 105 110
 Gly Lys Val Glu Gly Val Ile Ser Gln His Pro Glu Lys Gln Ile Met
 115 120 125
 Met Leu Arg Cys Ser Ile Glu Arg Leu Glu Gly Met Leu Arg Arg Glu
 130 135 140
 Asp Trp Gly Ala Ile Leu Gln Lys Asn Glu Asp Glu Val Leu Ala Leu
 145 150 155 160
 Lys Ser Thr Met Glu Ala Gln Leu Gln Gly Phe Lys Asp Leu Val Gly
 165 170 175
 Thr Trp Glu Gly Lys Tyr Gln Glu Phe Lys Lys Asn Lys Leu Ser Lys
 180 185 190
 Val Leu Val Tyr Asp Phe Thr Lys Ser Tyr Ser Asn Leu Leu Asn Arg
 195 200 205
 Leu Glu Val Leu His Ala Glu Ser Ser Thr Asp Asp Leu Val Leu His
 210 215 220
 Val Asp Arg Met Ser Glu Asp Leu Lys Lys Thr Ile Glu Glu Ile Asp
 225 230 235 240
 Gly Asn Leu Phe Gln Val Thr Pro Glu Glu Leu Ser Leu Leu Ala Arg

245 250 255
 Glu Tyr Gln Gly Leu Met Asn Glu Leu Pro Leu Ile Val Gln Glu Gly
 260 265 270
 Asn Arg Leu Gln Glu Ala Ile Ser Ser Glu Gly Val Ser Gln Gly Leu
 275 280 285
 Met Leu Leu Asn Ser Leu Leu Asn Arg Asp Glu Lys Ile Asn Lys Asn
 290 295 300
 Ile Glu Ser Ser Arg Lys Asn Leu Val Ala Ile Ala Lys Gln Ala Arg
 305 310 315 320
 Ser Asp Ala Arg Asn Ile Asp Ser Gln Gly Leu Ala Pro Leu Ile Gln
 325 330 335
 Arg Asn Arg Ala Ser Leu Asp Asn Ile Leu Gln Asn Met Tyr Leu Phe
 340 345 350
 Asn Gly Ser Ile Arg Asn Ile His Ala Leu Asp Thr Glu Thr Leu Val
 355 360 365
 Ala Thr Ser Ser Asn Met Phe Ser Ala Met His Thr Phe Asp Trp Asn
 370 375 380
 Ile Tyr Thr Asn Leu Leu Asp Val Leu Glu Ile Gln Ser Lys Pro Ala
 385 390 395 400
 Pro Ala Pro Met Glu Asn Pro Asp Leu Pro Gly Ala Leu Pro Glu Glu
 405 410 415
 Val Gln Asp Ala Val Ala Glu Asp Val Ser Gly Thr His Arg Leu His
 420 425 430
 His Gln Val Leu Lys Arg Arg Cys Ala Asp Leu Lys Asn Met Ile Ser
 435 440 445
 Gln Leu Gln Lys Ser Ile Asn Lys Trp Gly Met Ala Lys Ala Ile Val
 450 455 460
 Leu Gly Ile Val Ala Val Leu Phe Cys Val Leu Ser Ala Ile Phe Ile
 465 470 475 480
 Gly Gln Asn Ile Leu Ser Leu Leu Ile Leu Ser Cys Val Gly Leu Leu
 485 490 495
 Leu Thr Gln Val Cys Pro Leu Ile Phe Asp Arg Ile Ser Lys Ser Lys
 500 505 510
 Glu Phe Glu Lys Gln Val Leu Glu Thr Ala Gln Ser Leu Ile Pro Ala
 515 520 525
 Thr Lys Ile Leu Pro Ser Glu Phe Asn Asn Lys Asp Leu Asn Arg Leu
 530 535 540
 Ala Lys Leu Gln Asp Asn Leu Asn Leu Glu Gly Phe Gly Pro Thr Trp
 545 550 555 560
 Ala Arg Asn Ile Val Ser Asp Leu Glu Gly Ile Pro Thr Lys Glu Lys
 565 570 575
 Ser Leu Lys Asp Leu Thr Lys Glu Phe Arg Lys Asp Ser Lys Asn Leu
 580 585 590
 Asn Lys Arg Ile Lys Arg Arg Phe Lys Glu Gly Leu Gly Gln Glu Ala
 595 600 605
 Pro Val Val Arg Pro Thr Ile Pro Gln Asp Ile Arg Gly Ala Glu Val
 610 615 620
 Phe Ala Glu Leu His Arg Glu Leu Glu His Leu Gln Lys Gln Lys Glu
 625 630 635 640
 Glu Ile Ser Ile Arg Gly Asp Ala Leu Val Gln Glu Arg Met Gly Leu
 645 650 655
 Cys Leu Glu Lys Ser Lys Tyr Asp Asn Glu Lys Ala His Ala Ala Ala
 660 665 670
 Met Thr Lys Lys Val Gly Lys Leu Gln Asn Ile Asp Arg Leu Gln Lys
 675 680 685
 Asn Asn Glu Thr Tyr Val Arg Ile Gln Asn Phe Phe Arg Thr Leu Ile
 690 695 700
 Gln Glu Lys Leu Gly Arg Asp Thr Val Gln Glu Ile Asp Val Val Lys
 705 710 715 720
 Glu Ala Lys Glu Leu His Glu Leu Ala Ala Ile Ile Tyr Gly Asn Thr
 725 730 735
 Ser Gly Lys Ser Gln Lys Gln Arg Ala Lys Lys Gln Phe Lys Glu Asn
 740 745 750
 Val Leu His Ile Ala Gly Lys Gly Gln Leu Glu Leu Leu Glu Ala Tyr

755 760 765
 Leu Asn Val Thr Ala Ser Gln Gly Leu Cys Arg His Gln Met Gln Ala
 770 775 780
 Ser Phe Arg Glu Arg Ile Leu Leu Asn Pro Asp Gly Ala Lys His Gly
 785 790 795 800
 Glu Ala Glu Arg Thr Leu Ala Ser Arg Glu Glu Met Leu Lys Thr Leu
 805 810 815
 Gly Leu Ser Tyr Leu Thr Pro Phe Val Arg Phe Ser Ser Pro Glu Ser
 820 825 830
 Thr Gln Ser Gly Tyr Asn Gln Ile Leu Lys Val Arg Glu Gln Leu Phe
 835 840 845
 Asp Ile Glu Gln Arg Leu Gln Asn Gln Glu Thr Val Ser Pro Glu Asp
 850 855 860
 Tyr Ala Ala Val Gln Ala Ala Leu Ala Ala Tyr Val Arg Lys His Glu
 865 870 875 880
 Ser Leu Ile Val Ser Thr Tyr Gly Leu Gly Ala Gln Glu Gly Gln Thr
 885 890 895
 Ser Ser Lys Val Thr Thr Leu Met Arg Asp Leu His Ala Val Glu Glu
 900 905 910
 Leu Val Glu Met Gly Val Glu Thr Tyr Arg Leu Asn Arg Ser Asp Gln
 915 920 925
 Ile Leu His Arg Val His Ser Val Leu His Ser His Leu Arg Asp Ser
 930 935 940
 Asp Ser Ser Gly Asn Gly Ile Ile Asp Val Val Lys Lys Leu Phe Glu
 945 950 955 960
 Leu Leu Asn Asn Asn Gly Asn Asn Pro Asn Asp Pro Glu Cys Gln Lys
 965 970 975
 Tyr Met Gln Ile Leu Leu Asp Ala Pro Val Ser Leu Leu Tyr Gly Ala
 980 985 990
 Phe Lys Ser Phe Lys Asn Glu Phe Leu Leu Asn Phe Thr Glu Leu Asn
 995 1000 1005
 Ile Ala Asn Ser Thr Lys Ala Ala Glu Glu Glu Ala Lys Arg Tyr Val
 1010 1015 1020
 Glu Glu Lys Gly Arg Gly Phe Glu Thr Tyr Trp Glu Glu Ala Lys Gln
 1025 1030 1035 1040
 Arg Leu Glu Ala Ile Ala Ala Glu Leu Asp Asp Leu Arg Asn Gln Glu
 1045 1050 1055
 Thr Leu Leu Glu Gln Glu Ile Arg Leu Ala Asn Leu Lys Ile Ser Ile
 1060 1065 1070
 Phe Ser Asp Leu Asn Leu Arg Glu Lys Val Ser Val Glu Lys Ala Ala
 1075 1080 1085
 Leu Glu Glu Glu Ile Gln Gly Ile Gln Glu Gln Tyr Ala Glu Met Gln
 1090 1095 1100
 Gly Ile Glu Asp Leu Glu Leu Lys Gln Lys Phe Glu Asp Leu Gln Lys
 1105 1110 1115 1120
 Lys Leu Glu Ala Leu Glu Glu Arg Leu Leu Gln Ile Gly Arg Arg Ile
 1125 1130 1135
 Asp Ser Ser Val Asp Lys Gln Lys Glu Leu Leu Gly Leu Leu Gly Arg
 1140 1145 1150
 Glu Glu Ala Ala
 1155
 <210>172
 <211>518
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>172
 Cys Tyr Glu Asn Leu Phe His Tyr Pro Arg Ala Ser Met Ala Asp Ile
 1 5 10 15
 Leu Val Ile Gly Ala Asn Pro Thr Gly Leu Ile Leu Ala Asn Met Leu
 20 25 30
 Ile Gln His Gly Ile Ser Val Lys Val Ile Asp His Arg Ala Ser Pro
 35 40 45
 Glu Asp Pro Ser Phe Leu Asp Cys Arg Lys Leu Pro Val Ile Leu Ser
 50 55 60

Cys Ser Ser Leu Glu Leu Leu His Asn Ser Glu Met Leu Gly Asp Phe
 65 70 75 80
 Ile Gln Ala Asn His Lys Ile Phe Gly Ala Arg Tyr His Trp Lys Lys
 85 90 95
 Arg Thr Leu Leu Phe Lys Phe Ser Gln Ala Thr Asp Ser Pro Val Pro
 100 105 110
 Phe Ser Leu Ser Thr Thr Tyr Gln Ser Leu Glu Gln His Leu Ile Asp
 115 120 125
 Glu Phe Leu Lys Arg Gly Gly Val Ile Asp Trp Ser Thr Arg Pro Val
 130 135 140
 Thr Leu Val Asp Asn Ser Ile Phe Ile Glu Ser Thr Lys Val Ser Gln
 145 150 155 160
 Asn Phe Glu Asn Arg Glu Ile Tyr Asn Pro Lys Trp Ile Ile Ala Cys
 165 170 175
 Glu Ala Asp Asn Asn Leu Asp Ile Arg Asp Leu Val Lys Ser Gln Leu
 180 185 190
 Arg Ala Arg Arg Ile Asn Arg Glu Val Ile Phe Ile Asn Cys Asp Glu
 195 200 205
 Gly Glu Pro Phe Glu Glu Asp His Ile His Leu Leu Pro Ile Thr Lys
 210 215 220
 Asn Phe Leu Asn Phe Val Phe Tyr Asn Pro Gln Glu Lys Thr Lys Gln
 225 230 235 240
 Leu Cys Leu Pro Gln Gly Thr His Ser Ile Ser Pro Lys Leu Lys Gln
 245 250 255
 Lys Leu Leu Tyr Thr Tyr Asn Leu Val Ile Ser Asp Glu Asn Phe His
 260 265 270
 Ile Lys Thr Ser His His Ala Phe Pro Pro Glu His Gly Asn Val Leu
 275 280 285
 Phe Leu Gly Ser Leu Ser Asn Thr Leu Leu Leu Ser Tyr Leu Asn Gly
 290 295 300
 Ile Asn Thr Asn Ile His Ala Ala Phe Asn Leu Ala Trp Lys Leu Leu
 305 310 315 320
 Pro Val Leu Lys Lys Ala Ala Leu Lys His Leu Val Ile Thr Lys Glu
 325 330 335
 Gln Glu Asp Gly Asn Ile Leu Pro Tyr Ile Ser Pro Thr Thr Glu Lys
 340 345 350
 Arg Ala Lys Lys Leu Pro Phe Ser Arg Phe Tyr Thr Pro Ala Leu Met
 355 360 365
 Tyr Tyr Phe Leu Lys Gly Cys Arg Lys Phe Asn Thr Thr Gly Glu Glu
 370 375 380
 Tyr Tyr Tyr Pro Pro His Gln Ala Leu Lys Tyr Arg Ser Ser Asp Ile
 385 390 395 400
 Ile Lys Met Ser Pro Gln Asp Lys Glu Ile His Gly Pro Gly Pro Gly
 405 410 415
 Met Arg Ala Ile Asp Ala Arg Leu Glu Asn Gly Ser Phe Leu Leu Asp
 420 425 430
 Pro Leu Lys Ser Ser Lys His Leu Leu Ile Phe Phe Lys Asp Ile Pro
 435 440 445
 Asp Leu Lys Glu Ala Leu Gln Glu Glu Tyr Gly Glu Trp Ile Glu Ile
 450 455 460
 Cys Asn Val Lys Glu Pro Arg Ile Leu Asn Leu Tyr His Ala Asn Pro
 465 470 475 480
 Asn Ser Leu Phe Ile Ile Arg Pro Asp Arg Tyr Ile Gly Tyr Arg Thr
 485 490 495
 His Thr Phe Lys Leu His Glu Leu Ile Ser Tyr Leu Leu Arg Ile Phe
 500 505 510
 Ala Ser Glu Lys Thr Ser
 515

<210>173

<211>319

<212>PRT

<213>Chlamydia pneumoniae

<400>173

Leu Ile Lys Met Arg Lys Val Ala Phe Leu Val Ser Cys Leu Phe Ser

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1              10              15
Val Ala Ile Gly Ala Ser Ala Ala Pro Val Arg Val Pro Gly Phe Pro
      20              25              30
Gln Ile Pro Glu Asp Xaa Val Gln Ile Lys Thr Glu Val Cys Pro Lys
      35              40              45
Gln Glu Val Cys Leu Ala Val Thr Ile Lys Cys Asp Asp His Asn Leu
      50              55              60
Ile Gly Val Leu His Leu Pro Asn Thr Pro Thr Pro Glu Gly Gly Phe
      65              70              75              80
Pro Thr Val Val Leu Phe His Gly Phe Arg Gly Thr Lys Phe Gly Gly
      85              90              95
Leu Thr Gly Ala Tyr Arg Lys Leu Gly Arg Lys Phe Ala Ala Ala Gly
      100             105             110
Ile Ala Thr Leu Arg Val Asp Met Ala Gly Cys Gly Asp Ser Glu Gly
      115             120             125
Val Ala Glu Glu Val Pro Ile Glu Thr Tyr Leu Arg Asp Ala Gln Thr
      130             135             140
Ile Leu Glu Thr Val Gln Glu His Pro Asp Leu Asn Ala Tyr Arg Leu
      145             150             155             160
Gly Ile Ser Gly Phe Ser Leu Gly Cys His Ile Ala Phe Glu Leu Ala
      165             170             175
Lys Ile Tyr Asn Pro Arg Asp Leu Asn Ile Lys Ala Leu Ser Val Trp
      180             185             190
Ala Pro Ile Ala Asp Gly Gly Ile Leu Leu Lys Glu Leu Tyr Glu Asn
      195             200             205
Phe Ser Lys His Gly Glu Gly Asp Ile Ile Ser Val Gly Lys Asp Phe
      210             215             220
Gly Phe Gly Pro Pro Pro Ile Ile Val Cys Ser Gly Asp Val Asp Leu
      225             230             235             240
Leu Ile Arg Ile Gln Asp His Val Thr Ala Asn Ser Leu Pro Thr Lys
      245             250             255
Pro Tyr Ile Leu His Gln Gln Gly Ile Asp Asp Thr Leu Val Ser Arg
      260             265             270
Thr Gln Gln Thr Leu Phe Lys Asn Thr Ala Pro Gly Arg Met Thr Phe
      275             280             285
Ile Ser Tyr Pro Asn Thr Gly His Asn Leu Ala Thr Ala Pro Asp Leu
      290             295             300
Asp Met Ile Leu Asp Gln Ile Val Ser His Phe Gln Arg Thr Leu
      305             310             315
<210>174
<211>507
<212>PRT
<213>Chlamydia pneumoniae
<400>174
Met Arg Tyr Asp Pro Asn Leu Ile Glu Lys Lys Trp Gln Gln Phe Trp
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Lys Glu His Arg Ser Phe Gln Ala Asn Glu Asp Glu Asp Lys Val Lys
      20              25              30
Tyr Tyr Val Leu Asp Met Phe Pro Tyr Pro Ser Gly Ala Gly Leu His
      35              40              45
Val Gly His Leu Ile Gly Tyr Thr Ala Thr Asp Ile Val Ala Arg Tyr
      50              55              60
Lys Arg Ala Arg Gly Phe Ser Val Leu His Pro Met Gly Trp Asp Ser
      65              70              75              80
Phe Gly Leu Pro Ala Glu Gln Tyr Ala Ile Arg Thr Gly Thr His Pro
      85              90              95
Lys Val Thr Thr Gln Lys Asn Ile Ala Asn Phe Lys Lys Gln Leu Ser
      100             105             110
Ala Met Gly Phe Ser Tyr Asp Glu Gly Arg Glu Phe Ala Thr Ser Asp
      115             120             125
Pro Asp Tyr Tyr His Trp Thr Gln Lys Leu Phe Leu Phe Leu Tyr Asp
      130             135             140
Gln Gly Leu Ala Tyr Met Ala Asp Met Ala Val Asn Tyr Cys Pro Glu
      145             150             155             160

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Leu Gly Thr Val Leu Asn Glu Glu Val Glu Asn Gly P Ser Ile
 165 170 175
 Glu Gly Gly Tyr Pro Val Glu Arg Lys Met Leu Arg Gln Trp Ile Leu
 180 185 190
 Lys Ile Thr Ala Tyr Ala Asp Lys Leu Leu Glu Gly Leu Asp Ala Leu
 195 200 205
 Asp Trp Pro Glu Asn Val Lys Gln Leu Gln Lys Asn Trp Ile Gly Lys
 210 215 220
 Ser Glu Gly Ala Leu Val Thr Xaa His Leu Thr Gln Glu Gly Ser Leu
 225 230 235 240
 Glu Ala Phe Thr Thr Arg Leu Asp Thr Leu Leu Gly Val Ser Phe Leu
 245 250 255
 Val Ile Ala Pro Glu His Pro Asp Leu Asp Ser Ile Val Ser Glu Glu
 260 265 270
 Gln Arg Asp Glu Val Thr Ala Tyr Val Gln Glu Ser Leu Arg Lys Ser
 275 280 285
 Glu Arg Asp Arg Ile Ser Ser Val Lys Thr Lys Thr Gly Val Phe Thr
 290 295 300
 Gly Asn Tyr Ala Lys His Pro Ile Thr Gly Asn Leu Leu Pro Val Trp
 305 310 315 320
 Ile Ser Asp Tyr Val Val Leu Gly Tyr Gly Thr Gly Val Val Met Gly
 325 330 335
 Val Pro Ala His Asp Glu Arg Asp Arg Glu Phe Ala Glu Met Phe Ser
 340 345 350
 Leu Pro Ile His Glu Val Ile Asp Asp Asn Gly Val Cys Ile His Ser
 355 360 365
 Asn Tyr Asn Asp Phe Cys Leu Asn Gly Leu Ser Gly Gln Glu Ala Lys
 370 375 380
 Asp Tyr Val Ile Asn Tyr Leu Glu Met Arg Ser Leu Gly Arg Ala Lys
 385 390 395 400
 Thr Met Tyr Arg Leu Arg Asp Trp Leu Phe Ser Arg Gln Arg Tyr Trp
 405 410 415
 Gly Glu Pro Ile Pro Ile Ile His Phe Glu Asp Gly Thr His Arg Pro
 420 425 430
 Leu Glu Asp Asp Glu Leu Pro Leu Leu Pro Pro Asn Ile Asp Asp Tyr
 435 440 445
 Arg Pro Glu Gly Phe Gly Gln Gly Pro Leu Ala Lys Ala Gln Asp Trp
 450 455 460
 Val His Ile Tyr Asp Glu Lys Thr Gly Arg Pro Gly Cys Arg Glu Thr
 465 470 475 480
 Tyr Thr Met Pro Gln Trp Ala Gly Ser Cys Trp Tyr Tyr Leu Arg Phe
 485 490 495
 Cys Asp Ala His Asn Tyr Ser Val Ala Leu Glu
 500 505

<210>175

<211>198

<212>PRT

<213>Chlamydia pneumoniae

<400>175

Arg Arg Leu Lys Ile Gly Cys Ile Ser Thr Thr Arg Arg Gln Val Asp
 1 5 10 15
 Gln Asp Val Glu Arg Leu Ile Leu Cys His Ser Gly Gln Ala Leu Ala
 20 25 30
 Gly Ile Ile Phe Val Ser Val Met His Thr Thr Thr Gln Leu Pro Trp
 35 40 45
 Ser Lys Glu Lys Glu Ser Tyr Trp Met Pro Val Asp Leu Tyr Ile Gly
 50 55 60
 Gly Ala Glu His Ala Val Leu His Leu Leu Tyr Ser Arg Phe Trp His
 65 70 75 80
 Arg Val Phe Tyr Asp Ala Gly Leu Val Ser Thr Pro Glu Pro Phe Lys
 85 90 95
 Lys Leu Ile Asn Gln Gly Leu Val Leu Ala Ser Ser Tyr Arg Ile Pro
 100 105 110
 Gly Lys Gly Tyr Val Ser Ile Glu Asp Val Arg Glu Glu Asn Gly Thr

115 120 125
 Trp Ile Ser Thr Cys Gly Glu Ile Val Glu Val Arg Gln Glu Lys Met
 130 135 140
 Ser Lys Ser Lys Leu Asn Gly Val Asp Pro Gln Val Leu Ile Glu Glu
 145 150 155 160
 Tyr Gly Ala Asp Ala Leu Arg Met Tyr Ala Met Phe Ser Gly Pro Leu
 165 170 175
 Asp Lys Asn Lys Thr Trp Ser Asn Glu Gly Val Trp Gly Val Pro Ser
 180 185 190
 Phe Pro Lys Ser Phe Leu
 195

<210>176

<211>163

<212>PRT

<213>Chlamydia pneumoniae

<400>176

Phe Gly Xaa Ser Ser Glu Val Gln Asp Ile Glu Asp Arg Asp Gly Leu
 1 5 10 15
 Val Leu Ala His Lys Leu Val Phe Arg Ile Thr Glu His Ile Glu Lys
 20 25 30
 Met Ser Leu Asn Thr Ile Pro Ser Ser Phe Met Glu Phe Leu Asn Asp
 35 40 45
 Phe Ser Lys Leu Pro Val Tyr Ser Lys Arg Ala Leu Ser Met Ala Val
 50 55 60
 Arg Val Leu Glu Pro Ile Xaa Pro His Ile Ser Glu Glu Leu Trp Val
 65 70 75 80
 Ile Leu Gly Asn Pro Pro Gly Ile Asp Gln Ala Ala Trp Pro Gln Ile
 85 90 95
 Asp Glu Ser Tyr Leu Val Ala Gln Thr Val Thr Phe Val Val Gln Val
 100 105 110
 Asn Gly Lys Leu Arg Gly Arg Leu Glu Val Ala Lys Glu Ala Pro Lys
 115 120 125
 Glu Glu Val Leu Ser Leu Ser Arg Ser Val Val Ala Lys Tyr Leu Glu
 130 135 140
 Asn Ala Gln Ile Arg Lys Glu Ile Tyr Val Pro Asn Lys Leu Val Asn
 145 150 155 160
 Phe Val Leu

<210>177

<211>437

<212>PRT

<213>Chlamydia pneumoniae

<400>177

Met Met Leu Arg Gly Val His Arg Ile Phe Lys Cys Phe Tyr Asp Val
 1 5 10 15
 Val Leu Val Cys Ala Phe Val Ile Ala Leu Pro Lys Leu Leu Tyr Lys
 20 25 30
 Met Leu Val Tyr Gly Lys Tyr Lys Lys Ser Leu Ala Val Arg Phe Gly
 35 40 45
 Leu Lys Lys Pro His Val Pro Gly Glu Gly Pro Leu Val Trp Phe His
 50 55 60
 Gly Ala Ser Val Gly Glu Val Arg Leu Leu Leu Pro Val Leu Glu Lys
 65 70 75 80
 Phe Cys Glu Glu Phe Pro Gly Trp Arg Cys Leu Val Thr Ser Cys Thr
 85 90 95
 Glu Leu Gly Val Gln Val Ala Ser Gln Val Phe Ile Pro Met Gly Ala
 100 105 110
 Thr Val Ser Ile Leu Pro Leu Asp Phe Ser Ile Ile Ile Lys Ser Val
 115 120 125
 Val Ala Lys Leu Arg Pro Ser Leu Ala Val Phe Ser Glu Gly Asp Cys
 130 135 140
 Trp Leu Asn Phe Ile Glu Glu Ala Lys Arg Ile Gly Ala Thr Thr Leu
 145 150 155 160
 Val Ile Asn Gly Arg Ile Ser Ile Asp Ser Ser Lys Arg Phe Lys Phe

165 170 175
 Leu Lys Arg Leu Gly Lys Asn Tyr Phe Ser Pro Val Asp Gly Phe Leu
 180 185 190
 Leu Gln Asp Glu Val Gln Lys Gln Arg Phe Leu Ser Leu Gly Ile Pro
 195 200 205
 Glu His Lys Leu Gln Val Thr Gly Asn Ile Lys Thr Tyr Val Ala Ala
 210 215 220
 Gln Thr Ala Leu His Leu Glu Arg Glu Thr Trp Arg Asp Arg Leu Arg
 225 230 235 240
 Leu Pro Thr Asp Ser Lys Leu Val Ile Leu Gly Ser Met His Arg Ser
 245 250 255
 Asp Ala Gly Lys Trp Leu Pro Val Val Gln Lys Leu Ile Lys Glu Gly
 260 265 270
 Val Ser Val Leu Trp Val Pro Arg His Val Glu Lys Thr Lys Asp Val
 275 280 285
 Glu Glu Ser Leu His Arg Leu His Ile Pro Tyr Gly Leu Trp Ser Arg
 290 295 300
 Gly Ala Asn Phe Ser Tyr Val Pro Val Val Val Val Asp Glu Ile Gly
 305 310 315 320
 Leu Leu Lys Gln Leu Tyr Val Ala Gly Asp Leu Ala Phe Val Gly Gly
 325 330 335
 Thr Phe Asp Pro Lys Ile Gly Gly His Asn Leu Leu Glu Pro Leu Gln
 340 345 350
 Cys Glu Val Pro Leu Ile Phe Gly Pro His Ile Thr Ser Gln Ser Glu
 355 360 365
 Leu Ala Gln Arg Leu Leu Leu Ser Gly Ala Gly Leu Cys Leu Asp Glu
 370 375 380
 Ile Glu Pro Ile Ile Asp Thr Val Ser Phe Leu Asn Asn Gln Glu
 385 390 395 400
 Val Arg Glu Ala Tyr Val Gln Lys Gly Lys Val Phe Val Lys Ala Glu
 405 410 415
 Thr Ala Ser Phe Asp Arg Thr Trp Arg Ala Leu Lys Ser Tyr Ile Pro
 420 425 430
 Leu Tyr Lys Asn Ser
 435

<210>178

<211>179

<212>PRT

<213>Chlamydia pneumoniae

<400>178

Leu Leu Leu Glu Asp Leu Asp Thr Asp Ser Ile Pro Trp Pro Lys Leu
 1 5 10 15
 Tyr Leu Ser Glu Asp Phe Asp Phe Ala Tyr Tyr Pro Glu Ser Lys Ala
 20 25 30
 Ile Ile Asp Thr Val Ala Lys Leu Glu Lys Asn Asn Pro Gly Glu Glu
 35 40 45
 Phe Cys Leu Glu Ser Lys Lys Ile Leu Ala Arg Tyr Leu Leu Glu Gln
 50 55 60
 Leu Phe Lys Leu Glu Thr Gly Leu Asn Phe Pro Thr Ser Thr Ile Asp
 65 70 75 80
 Gly Gly Arg Glu Ser Phe Leu Ile Glu Phe Ser His Glu Thr Lys Lys
 85 90 95
 Pro Thr Val Trp Ala Phe Ile Tyr Phe Tyr Tyr Tyr His Ser Asn Gly
 100 105 110
 Pro Lys Leu Glu Lys Asp Phe Lys Gln Ala Gly Cys Glu Val His Asn
 115 120 125
 Arg Leu Leu Asn Leu Gly Leu Lys Tyr Arg Pro Gln Ala Gly Ala Gln
 130 135 140
 Asn Asp Gly Arg Asn Gly Gly Pro Tyr Gly Pro Ile Gly Phe Leu Ile
 145 150 155 160
 Val Trp Glu Glu Asn Tyr Gly Ser Val Leu Lys Asp His Gly Phe Ile
 165 170 175
 Lys Asp Asn

<210>179

<211>115

<212>PRT

<213>Chlamydia pneumoniae

<400>179

Cys Cys Phe Gly Gly Glu Thr Ala Thr Arg Ile Phe Ser Met Thr Pro
 1 5 10 15
 Ser Gly Phe Ser Leu Ala Thr Glu Glu Lys Val Gln Val Ser Thr Ala
 20 25 30
 Glu Lys Val Ile Lys Ile Leu Ala Leu Ile Phe Phe Pro Ile Ile Leu
 35 40 45
 Ile Ala Leu Ala Ile Arg Tyr Phe Leu His Arg Lys Phe Asp Arg Lys
 50 55 60
 Cys Phe Val Ile Pro Gln Asp Thr Pro Lys Glu Leu Glu Leu Ile Leu
 65 70 75 80
 Ala Ala Asn Pro Gln Leu Val Glu Lys Ala Ala Arg Glu Val His Pro
 85 90 95
 Gly Phe Phe Ala Leu Pro Thr Lys Tyr Gln Ser Met Tyr Ile Gln Thr
 100 105 110
 Ser Lys Gly
 115

<210>180

<211>544

<212>PRT

<213>Chlamydia pneumoniae

<400>180

Thr Val Glu Leu Leu Ser Leu Asn Lys Ser Tyr Phe Glu Ile Gln Arg
 1 5 10 15
 Leu Arg Tyr Arg Pro Glu Ile Leu Thr Leu Leu Glu Thr Ile Arg Ser
 20 25 30
 Lys His Ile Gln Glu Thr Ser Ser Pro Pro Ser Pro Pro Glu Leu
 35 40 45
 Gln Lys His Ile Pro Asn Leu Cys Arg Ile Pro Glu Val Ser Ile Tyr
 50 55 60
 Thr Glu Gln Glu Thr Ser Ser Lys Pro Leu Lys Ile Gly Val Leu Leu
 65 70 75 80
 Ser Gly Gly Gln Ala Pro Gly Gly His Asn Val Val Ile Gly Leu Phe
 85 90 95
 Asp Ala Leu Arg Val Phe Asn Pro Lys Thr Arg Leu Phe Gly Phe Ile
 100 105 110
 Lys Gly Pro Leu Gly Leu Thr Arg Gly Leu Tyr Lys Asp Leu Asp Ile
 115 120 125
 Ser Val Ile Tyr Asp Tyr Tyr Asn Met Gly Gly Phe Asp Met Leu Ser
 130 135 140
 Ser Ser Arg Glu Lys Ile Lys Thr Glu Glu Gln Lys Lys Asn Ile Leu
 145 150 155 160
 Asn Thr Val Lys Gln Leu Lys Leu Asp Gly Leu Leu Ile Ile Gly Gly
 165 170 175
 Asn Asn Ser Asn Thr Asp Thr Ala Met Leu Ala Glu Tyr Phe Leu Ala
 180 185 190
 His Asn Cys Lys Thr Ser Val Ile Gly Val Pro Lys Thr Ile Asp Gly
 195 200 205
 Asp Leu Lys Asn Cys Trp Ile Glu Thr Ser Leu Gly Phe His Thr Ser
 210 215 220
 Cys Arg Thr Tyr Ser Glu Met Ile Gly Asn Leu Ala Lys Asp Ala Leu
 225 230 235 240
 Ser Ala Lys Lys Tyr His His Phe Ile Arg Leu Met Gly Gln Gln Ala
 245 250 255
 Ser Tyr Thr Thr Leu Glu Cys Gly Leu Gln Thr Leu Pro Asn Ile Ala
 260 265 270
 Leu Ile Ser Glu Leu Ile Ala Thr Arg Lys Ile Ser Leu Lys Gln Leu
 275 280 285
 Ser Glu Gln Leu Ala Leu Gly Leu Val Arg Arg Tyr Lys Ser Gly Lys
 290 295 300

Asn Tyr Ser Thr Val Ile Pro Glu Gly Leu Ile Glu Ile Phe
 305 310 315 320
 Asp Thr Arg Lys Leu Ile Asp Glu Leu Asn Val Leu Leu Ala Asn Gly
 325 330 335
 Asp Ser Ser Met Lys Asn Ser Phe Gln Ala Leu Ser Arg Asp Ile Lys
 340 345 350
 Thr Phe His Leu Phe Pro Lys Asp Ile Ala Asn Gln Leu Leu Leu Ala
 355 360 365
 Arg Asp Ser His Gly Asn Val Arg Val Ser Lys Ile Ala Thr Glu Glu
 370 375 380
 Leu Leu Ala Val Met Val Lys Lys Glu Ile Glu Lys Ile Lys Pro His
 385 390 395 400
 Met Glu Phe His Ser Val Ser His Phe Phe Gly Tyr Glu Ala Arg Ala
 405 410 415
 Gly Phe Pro Ser Asn Phe Asp Cys Asn Tyr Gly Ile Ala Leu Gly Ile
 420 425 430
 Ile Ser Ala Leu Phe Leu Val Arg Gln Lys Thr Gly Tyr Met Ile Thr
 435 440 445
 Ile Asn Asn Leu Ala Gln Ser Tyr Thr Glu Trp Gln Gly Gly Ala Thr
 450 455 460
 Pro Leu Tyr Lys Met Met His Leu Glu Asn Arg Cys Gly Thr Glu Thr
 465 470 475 480
 Pro Val Ile Lys Thr Asp Ser Val Asp Pro Lys Ser Pro Ala Val Gln
 485 490 495
 His Leu Leu Gln Gln Ser Asp Ser Cys Leu Val Glu Asp Leu Tyr Arg
 500 505 510
 Phe Pro Gly Pro Leu Gln Tyr Phe Gly Lys Glu Glu Leu Ile Asp Gln
 515 520 525
 Arg Pro Leu Thr Leu Leu Trp Glu Asn Gln Thr His Ser Pro Leu Leu
 530 535 540

<210>181

<211>275

<212>PRT

<213>Chlamydia pneumoniae

<400>181

Leu Ile Thr Gly Val Val Leu Glu Lys His Glu Gln Arg Thr Met Phe
 1 5 10 15
 Ser Leu Thr Leu Asn Asn Phe Thr Phe Gly Leu Leu His Thr
 20 25 30
 Pro Leu His Tyr Asn Pro Pro Tyr Pro Ile Val Ile Leu Leu His Gly
 35 40 45
 Leu Ala Ser Asp Lys Thr Gly Ser Lys Arg Ser His Val Arg Leu Ala
 50 55 60
 Gln Glu Leu Thr Arg Leu Gly Ile Ala Ala Leu Arg Val Asp Leu Leu
 65 70 75 80
 Gly His Gly Asp Cys Glu Gly Glu Leu Met Asp Phe Ser Leu Glu Asn
 85 90 95
 Tyr Lys Gln Asn Ile Arg Glu Ile Ile Glu Tyr Thr His Ser Leu Leu
 100 105 110
 His Ile Asp Gln Glu Arg Leu Ala Ile Phe Gly Ser Ser Leu Gly Gly
 115 120 125
 Thr Leu Ala Leu Gln Thr Leu Pro Phe Phe Asn Lys Ile Lys Ala Leu
 130 135 140
 Ala Val Trp Ala Pro Thr Ile Ser Gly Glu Leu Met Ala Ala Glu Ala
 145 150 155 160
 Gln Lys Asn Ala Pro Glu Val Ile Thr Met Ser Gln Lys Gly Ala Ile
 165 170 175
 Thr Tyr Ala Gly Met Thr Leu Asn Pro Asp Phe Tyr Thr Gln Phe Leu
 180 185 190
 Lys Ile Asp Ile Val Lys Glu Leu Met Pro Ser Ala Arg Asn Leu Pro
 195 200 205
 Pro Ile Leu Tyr Met Gln Gly Glu Gln Asp Leu Leu Val Ser Ile Asn
 210 215 220
 His Arg Thr Leu Phe Thr Glu Ala Phe Ala Asn Gln Asp Lys Pro Ile

225 230 235 240
 Thr Ile Leu Thr Tyr Pro Asp Val Asp His Ala Phe Pro Phe Ala Glu
 245 250 255
 Ser Ser Ala Leu Ser Asp Leu Thr Gln Trp Leu Lys Arg Glu Leu Thr
 260 265 270
 Ser Gly Glu
 275

<210>182

<211>242

<212>PRT

<213>Chlamydia pneumoniae

<400>182

Phe Val Tyr Thr Leu Tyr Asn Ile Gln Ser Pro Phe Arg Ile Met Lys
 1 5 10 15
 Leu Tyr Ser Ile Ser Ser Asp Val Asp Thr Pro Trp Ile Phe Gln Leu
 20 25 30
 Met Ser Lys Val Asp Ser Tyr Leu Phe Leu Gly Gly Asn Arg Ile Lys
 35 40 45
 Val Val Ser Ile Val Met Gln Glu Pro Asn Leu Ile Ile Gly Lys Val
 50 55 60
 Glu Asn Val Arg Ile Ser Thr Ile Val Lys Ile Leu Lys Ile Leu Ser
 65 70 75 80
 Phe Leu Ile Phe Pro Leu Ile Leu Ile Ala Leu Ala Leu His Tyr Phe
 85 90 95
 Leu His Ala Lys Tyr Ala Asn His Leu Leu Val Ser Xaa Ile Leu Glu
 100 105 110
 Arg Ala Pro Gln Tyr Val Pro Ile Pro Gly Arg Ser Gly Xaa Thr Ala
 115 120 125
 Ser His Tyr Lys Leu Thr Thr Leu Val Pro Val Ser Gln Lys Asn Leu
 130 135 140
 Gln Ala Met Gly Ser Asn Pro Leu Xaa Val Glu Ala Ala Leu Arg Thr
 145 150 155 160
 Thr Lys Pro Ser Phe Phe Cys Val Pro Ala Lys Tyr Arg Gln Ile Ile
 165 170 175
 Ile Ser Ser His Gly Ile Arg Phe Ser Leu Asp Leu Glu Gln Leu Ala
 180 185 190
 Asp Asp Ile Asn Leu Asp Ser Val Ser Trp Pro Thr Glu Tyr Leu Asn
 195 200 205
 Ser Thr Met Asp Phe Cys Ser Lys Ala Asp Lys Arg Val Ile Gln Asn
 210 215 220
 Val Gln Asn Leu Arg Thr Gly Thr Tyr Ile Asn Ser Val Gly Lys Arg
 225 230 235 240
 Ser Phe

<210>183

<211>188

<212>PRT

<213>Chlamydia pneumoniae

<400>183

Phe Glu Lys Ala Ile Val Tyr Cys Ile Lys Cys Lys Gln Ile Ile Lys
 1 5 10 15
 Cys Ile Ser Ile Ile His Thr Pro Thr Pro Ala Thr Pro Leu Cys Thr
 20 25 30
 Glu Gly Glu Ile Phe Pro Gly Leu Val Asp Ser Ala Ile Gln Asn Asp
 35 40 45
 Leu Glu Arg Leu Leu Thr Val Lys Lys Arg Pro Asp Ile Ile Arg Glu
 50 55 60
 Tyr Leu Arg Ala Gly Gly Ser Leu Val Thr Thr Tyr Pro Lys Glu Gly
 65 70 75 80
 Gln Arg Leu Arg Ser Pro Glu Gln Leu Arg Val Leu Asp Asp Leu Val
 85 90 95
 Gln Ser Tyr Pro Asn His Leu His Ala Ile Glu Leu Asp Cys Gly Ala
 100 105 110
 Ile Pro Gln Asp Leu Ile Gly Ala Thr Tyr Ile Ile Thr Phe Ala Asp

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      115      120      125
Phe Ser Thr Tyr Ile Leu Ser Leu Arg Ser Tyr Gln Ala Asn Ser Pro
      130      135      140
Ser Asp Asp Thr Trp Gly Ile Trp Phe Gly Ser Ile Asp Asp Pro Val
145      150      155      160
Gln Ala Val Ile Ser Phe Leu Lys Asp His Gly Phe Ala Leu Pro Ser
      165      170      175
Thr Leu Ala Gln Asp Pro Leu Leu Cys Thr Asn Lys
      180      185

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<210>184

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>184

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Leu Cys Phe Lys Cys Ile Tyr Ile Lys Ile Ile Phe Ser Phe Leu Lys
  1      5      10      15
Gln Leu Met Thr Arg Ser Thr Ile Glu Ser Ser Asp Ser Leu Cys Ser
      20      25      30
Arg Ser Phe Ser Gln Lys Leu Ser Val Gln Thr Leu Lys Asn Leu Cys
      35      40      45
Glu Ser Arg Leu Met Lys Ile Thr Ser Leu Val Ile Ala Phe Leu Thr
      50      55      60
Leu Ile Val Gly Gly Ala Leu Ile Ala Leu Ala Gly Gly Gly Val Leu
      65      70      75      80
Ser Phe Pro Leu Gly Leu Ile Leu Gly Ser Val Leu Val Leu Phe Ser
      85      90      95
Ser Ile Tyr Leu Val Ser Cys Cys Lys Phe Phe Thr Leu Lys Glu Met
      100      105      110
Thr Met Thr Cys Ser Val Lys Ser Lys Ile Asn Ile Trp Phe Glu Lys
      115      120      125
Gln Arg Asn Lys Asp Ile Glu Lys Ala Leu Glu Asn Pro Asp Leu Xaa
      130      135      140
Gly Glu Asn Lys Arg Asn Val Gly Asn Arg Ser Ala Arg Asn Gln Leu
145      150      155      160
Glu Met Ile Leu His Glu Thr Asp Gly Ile Ile Leu Lys Arg Tyr Met
      165      170      175
Lys Gly Ala Lys Met Tyr Phe Tyr Leu
      180      185

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<210>185

<211>200

<212>PRT

<213>Chlamydia pneumoniae

<400>185

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Asn Val Leu Leu Phe Met Asn Trp Val Pro Lys Thr Ile Asp His Val
  1      5      10      15
Asp Pro Glu Ser Glu Ile Asp Ile Arg Lys Val Val Ser Cys Tyr Lys
      20      25      30
Leu Ile Lys Glu Cys Gln Pro Glu Phe Arg Ser Leu Ile Ser Glu Leu
      35      40      45
Leu Gly Val Ile Arg Cys Gly Leu Arg Leu Leu Lys Arg Ser Lys Tyr
      50      55      60
Gln Glu Gln Ala Arg Thr Val Ser Asp Glu Asp Ala Pro Leu Phe Cys
      65      70      75      80
Leu Thr Arg Ser Tyr Tyr Gln Asp Gly Tyr Leu Thr Pro Leu Arg Ala
      85      90      95
Gly Pro Arg Asp Leu Ile Asn His Tyr Ile His Leu Arg Arg Glu
      100      105      110
Asn Pro Lys His Phe Phe Ser Pro Lys His Pro Cys Tyr Tyr Ala Arg
      115      120      125
Leu Ala Phe Asn Glu Ser Val Cys Val Tyr Arg Glu Leu Phe Asp Ile
      130      135      140
Glu Arg Leu Thr Lys Met Tyr Val Glu Gly Asp Tyr Ser Lys Glu Gln
145      150      155      160
Glu Lys Asn Leu Gln Ala Ile Leu Ser Phe Val Lys Thr Leu Asp Glu

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      1              170              175
Gly Lys Asp Phe Leu Ile Glu His Lys Asp Thr Asp Leu Ile Gly Arg
      180              185              190
Gly Phe Thr Asp Val Phe Cys Thr
      195              200
<210>186
<211>111
<212>PRT
<213>Chlamydia pneumoniae
<400>186
Asn Leu Trp Ser His Phe Pro Arg Gly Phe Phe Met Leu Pro Phe Cys
  1              5              10              15
Pro Thr Ile Leu Leu Ala Lys Pro Phe Leu Asn Ser Glu Asn Tyr Gly
      20              25              30
Leu Glu Arg Leu Ala Ala Thr Val Asp Ser Tyr Phe Asp Leu Gly Gln
      35              40              45
Ser Gln Ile Val Phe Leu Ser Lys Gln Asp Gln Gly Ile Thr Val Glu
  50              55              60
Glu Leu Ser Ala Lys Asp Arg Lys Phe Lys Pro Gly Ser Met Asn Cys
  65              70              75              80
Thr Leu Tyr Thr Glu Asp Pro Ile Leu Pro Ala His Asn Ser Phe Ser
      85              90              95
Asn Cys Ser Asp Ile Gln Met Arg Thr Pro Ile Ser Pro Ile His
      100              105              110
<210>187
<211>276
<212>PRT
<213>Chlamydia pneumoniae
<400>187
Ser Phe His Ile Glu Phe Thr Ile Gly Glu Asn Asn Met Lys Asn Val
  1              5              10              15
Gly Ser Glu Cys Ser Gln Pro Leu Val Met Glu Leu Asn Thr Gln Pro
      20              25              30
Leu Arg Asn Leu Cys Glu Ser Arg Leu Val Lys Ile Thr Ser Phe Val
      35              40              45
Ile Ala Leu Leu Ala Leu Val Gly Gly Ile Thr Leu Thr Ala Leu Ala
  50              55              60
Gly Ala Gly Ile Leu Ser Phe Leu Pro Trp Leu Val Leu Gly Ile Val
  65              70              75              80
Leu Val Val Leu Cys Ala Leu Phe Leu Leu Phe Ser Tyr Lys Phe Cys
      85              90              95
Pro Ile Lys Glu Leu Gly Val Val Tyr Asn Thr Asp Ser Gln Ile His
      100              105              110
Gln Trp Phe Gln Lys Gln Arg Asn Lys Asp Leu Glu Lys Ala Thr Glu
      115              120              125
Asn Pro Glu Leu Phe Gly Glu Asn Arg Ala Glu Asp Asn Asn Arg Ser
      130              135              140
Ala Arg Ser Gln Val Lys Glu Thr Leu Arg Asp Cys Asp Gly Asn Val
      145              150              155              160
Leu Lys Lys Ile Tyr Glu Arg Asn Leu Asp Val Leu Leu Phe Met Asn
      165              170              175
Trp Val Pro Lys Thr Met Asp Asp Val Asp Pro Val Ser Glu Asp Ser
      180              185              190
Ile Arg Thr Val Ile Ser Cys Tyr Lys Leu Ile Lys Ala Cys Lys Pro
      195              200              205
Glu Phe Arg Ser Leu Ile Ser Glu Leu Leu Arg Ala Met Gln Ser Gly
      210              215              220
Leu Gly Leu Leu Ser Arg Cys Ser Arg Tyr Gln Glu Arg Ala Lys Thr
      225              230              235              240
Val Ser His Lys Asp Ala Pro Leu Phe Cys Pro Thr His Ser Tyr Tyr
      245              250              255
Arg Asp Gly Tyr Leu Thr Pro Leu Arg Ala Gly Pro Arg Tyr Ile Ile
      260              265              270
Asn Arg Ala Ile

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275

<210>188

<211>358

<212>PRT

<213>Chlamydia pneumoniae

<400>188

Asn Val Arg Lys Asn His Ile Ile Arg Gly Glu Lys Tyr Asn Thr Cys
 1 5 10 15
 Thr Val Ile Ala Phe Val Leu Ser Met Ser Tyr Asp Thr Leu Phe Lys
 20 25 30
 Asn Leu Glu Lys Glu Asp Ser Val His Lys Ile Cys Asn Glu Ile Phe
 35 40 45
 Ala Leu Val Pro Arg Leu Asn Thr Ile Ala Cys Thr Glu Ala Ile Ile
 50 55 60
 Lys Asn Leu Pro Lys Ala Asp Ile His Val His Leu Pro Gly Thr Ile
 65 70 75 80
 Thr Pro Gln Leu Ala Trp Ile Leu Gly Val Lys Asn Gly Phe Leu Lys
 85 90 95
 Trp Ser Tyr Asn Ser Trp Thr Asn His Arg Leu Leu Ser Pro Lys Asn
 100 105 110
 Pro His Lys Gln Tyr Ser Asn Ile Phe Arg Asn Phe Gln Asp Ile Cys
 115 120 125
 His Glu Lys Asp Pro Asp Leu Ser Val Leu Gln Tyr Asn Ile Leu Asn
 130 135 140
 Tyr Asp Phe Asn Ser Phe Asp Arg Val Met Ala Thr Val Gln Gly His
 145 150 155 160
 Arg Phe Pro Pro Gly Gly Ile Gln Asn Glu Glu Asp Leu Leu Leu Ile
 165 170 175
 Phe Asn Asn Tyr Leu Gln Gln Cys Leu Asp Asp Thr Ile Val Tyr Thr
 180 185 190
 Glu Val Gln Gln Asn Ile Arg Leu Ala His Val Leu Tyr Pro Ser Leu
 195 200 205
 Pro Glu Lys His Ala Arg Met Lys Phe Tyr Gln Ile Leu Tyr Arg Ala
 210 215 220
 Ser Gln Thr Phe Ser Lys His Gly Ile Thr Leu Arg Phe Leu Asn Cys
 225 230 235 240
 Phe Asn Lys Thr Phe Ala Pro Gln Ile Asn Thr Gln Glu Pro Ala Gln
 245 250 255
 Glu Ala Val Gln Trp Leu Gln Glu Val Asp Ser Thr Phe Pro Gly Leu
 260 265 270
 Phe Val Gly Ile Gln Ser Ala Gly Ser Glu Ser Ala Pro Gly Ala Cys
 275 280 285
 Pro Lys Arg Leu Ala Ser Gly Tyr Arg Asn Ala Tyr Asp Ser Gly Phe
 290 295 300
 Gly Cys Ala Ala His Ala Gly Glu Gly Ile Glu Thr Arg Thr Ile Phe
 305 310 315 320
 Ser Ser Ala Lys Val Asn Pro Glu Gly Leu Ile Glu Ile Thr Arg Val
 325 330 335
 Thr Phe Ser Ser Leu Lys Arg Lys Gln Pro Ser Ser Leu Pro Ile Arg
 340 345 350
 Val Thr Cys Gln Leu Gly
 355

<210>189

<211>429

<212>PRT

<213>Chlamydia pneumoniae

<400>189

Leu Gln Ser Ala Arg Arg His Leu Asn Thr Ile Phe Ile Leu Asp Phe
 1 5 10 15
 Gly Ser Gln Tyr Thr Tyr Val Leu Ala Lys Gln Val Arg Lys Leu Phe
 20 25 30
 Val Tyr Cys Glu Val Leu Pro Trp Asn Ile Ser Val Gln Cys Leu Lys
 35 40 45
 Glu Arg Ala Pro Leu Gly Ile Ile Leu Ser Gly Gly Pro His Ser Val

```

      50              55              60
Tyr Glu Asn Lys Ala Pro His Leu Asp Pro Glu Ile Tyr Lys Leu Gly
 65              70              75              80
Ile Pro Ile Leu Ala Ile Cys Tyr Gly Met Gln Leu Met Ala Arg Asp
      85              90              95
Phe Gly Gly Thr Val Ser Pro Gly Val Gly Glu Phe Gly Tyr Thr Pro
      100              105              110
Ile His Leu Tyr Pro Cys Glu Leu Phe Lys His Ile Val Asp Cys Glu
      115              120              125
Ser Leu Asp Thr Glu Ile Arg Met Ser His Arg Asp His Val Thr Thr
      130              135              140
Ile Pro Glu Gly Phe Asn Val Ile Ala Ser Thr Ser Gln Cys Ser Ile
145              150              155              160
Ser Gly Ile Glu Asn Thr Lys Gln Arg Leu Tyr Gly Leu Gln Phe His
      165              170              175
Pro Glu Val Ser Asp Ser Thr Pro Thr Gly Asn Lys Ile Leu Glu Thr
      180              185              190
Phe Val Gln Glu Ile Cys Ser Ala Pro Thr Leu Trp Asn Pro Leu Tyr
      195              200              205
Ile Gln Gln Asp Leu Val Ser Lys Ile Gln Asp Thr Val Ile Glu Val
      210              215              220
Phe Asp Glu Val Ala Gln Ser Leu Asp Val Gln Trp Leu Ala Gln Gly
225              230              235              240
Thr Ile Tyr Ser Asp Val Ile Glu Ser Ser Arg Ser Gly His Ala Ser
      245              250              255
Glu Val Ile Lys Ser His His Asn Val Gly Gly Leu Pro Lys Asn Leu
      260              265              270
Lys Leu Lys Leu Val Glu Pro Leu Arg Tyr Leu Phe Lys Asp Glu Val
      275              280              285
Arg Ile Leu Gly Glu Ala Leu Gly Leu Ser Ser Tyr Leu Leu Asp Arg
      290              295              300
His Pro Phe Pro Gly Pro Gly Leu Thr Ile Arg Val Ile Gly Glu Ile
305              310              315              320
Leu Pro Glu Tyr Leu Ala Ile Leu Arg Arg Ala Asp Leu Ile Phe Ile
      325              330              335
Glu Glu Leu Arg Lys Ala Lys Leu Tyr Asp Lys Ile Ser Gln Ala Phe
      340              345              350
Ala Leu Phe Leu Pro Ile Lys Ser Val Ser Val Lys Gly Asp Cys Arg
      355              360              365
Ser Tyr Gly Tyr Thr Ile Ala Leu Arg Ala Val Glu Ser Thr Asp Phe
      370              375              380
Met Thr Gly Arg Trp Ala Tyr Leu Pro Cys Asp Val Leu Ser Ser Cys
385              390              395              400
Ser Ser Arg Ile Ile Asn Glu Ile Pro Glu Val Ser Arg Val Val Tyr
      405              410              415
Asp Ile Ser Asp Lys Pro Pro Ala Thr Ile Glu Trp Glu
      420              425

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<210>190

<211>266

<212>PRT

<213>Chlamydia pneumoniae

<400>190

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Ala Pro Ile Gly Ala Ala Ile Gly Ile Gly Pro Leu Gly Ile Ser Arg
 1              5              10              15
Ala His His Leu Val Glu Ala Gly Ala Asn Val Leu Val Ile Asp Thr
      20              25              30
Ala His Ala His Ser Lys Gly Val Phe Gln Thr Val Leu Glu Ile Lys
      35              40              45
Ser Gln Phe Pro Gln Ile Ser Leu Val Val Gly Asn Leu Val Thr Ala
      50              55              60
Glu Ala Ala Val Ser Leu Ala Glu Ile Gly Val Asp Ala Val Lys Val
      65              70              75              80
Gly Ile Gly Pro Gly Ser Ile Cys Thr Thr Arg Ile Val Ser Gly Val
      85              90              95

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Gly Tyr Pro Gln Ile Ala Ile Thr Asn Val Ala Lys A Leu Lys
 100 105 110
 Asn Ser Ala Val Thr Val Ile Ala Asp Gly Arg Ile Arg Tyr Ser Gly
 115 120 125
 Asp Val Val Lys Ala Leu Ala Ala Gly Ala Asp Cys Val Met Leu Gly
 130 135 140
 Ser Leu Leu Ala Gly Thr Asp Glu Ala Pro Gly Asp Ile Val Ser Ile
 145 150 155 160
 Asp Glu Lys Leu Phe Lys Arg Tyr Arg Gly Met Gly Ser Leu Gly Ala
 165 170 175
 Met Lys Gln Gly Ser Ala Asp Arg Tyr Phe Gln Thr Gln Gly Gln Lys
 180 185 190
 Lys Leu Val Pro Gly Gly Val Glu Gly Leu Val Ala Tyr Lys Gly Ser
 195 200 205
 Val His Asp Val Leu Tyr Gln Ile Leu Gly Gly Ile Arg Ser Gly Met
 210 215 220
 Gly Tyr Val Gly Ala Glu Thr Leu Lys Asp Leu Lys Thr Lys Ala Ser
 225 230 235 240
 Phe Val Arg Ile Thr Glu Ser Gly Arg Ala Glu Ser His Ile His Asn
 245 250 255
 Ile Tyr Lys Val Gln Pro Thr Leu Asn Tyr
 260 265

<210>191

<211>170

<212>PRT

<213>Chlamydia pneumoniae

<400>191

Lys Ile Phe Ile Trp Phe Val Glu Lys Ile Val Ile Leu Ser Met Ile
 1 5 10 15
 Met Thr Thr Ile Ser Asn Ser Pro Ser Pro Ala Leu Asn Pro Glu Leu
 20 25 30
 Ser Leu Ile Pro Pro Pro Thr Leu Val Ser Ser Gly Thr Gln Thr Ser
 35 40 45
 Leu Ala Tyr Thr Ile Pro Ala Gln Gly Arg Arg Ser Thr Leu Arg Ile
 50 55 60
 Ile Leu Asp Ile Phe Ile Ile Ile Leu Gly Leu Ala Thr Ile Ile Ser
 65 70 75 80
 Thr Phe Ile Val Ile Phe Phe Leu Asn Gly Leu Asn Leu Leu Ser Thr
 85 90 95
 Pro Ser Ile Ile Ser Ser Ser Cys Leu Ile Ile Val Gly Leu Leu Phe
 100 105 110
 Leu Ile Met Gly Leu Tyr Phe Met Ile Ser Ser Leu Asp Gln Gly Leu
 115 120 125
 Val Gly Leu Leu Gln Lys Glu Leu Ser Gln Ala Glu Glu Arg Glu Glu
 130 135 140
 Glu Tyr Ile Gln Glu Ile Glu Ala Leu Arg Gly Ala Pro Arg Ala Glu
 145 150 155 160
 Ser Pro Thr Glu Ser Pro Ser Thr Trp Leu
 165 170

<210>192

<211>140

<212>PRT

<213>Chlamydia pneumoniae

<400>192

Leu Leu Leu Ala Cys Phe Gln Phe Leu Leu Arg Arg Arg Asp Met Glu
 1 5 10 15
 Gln Pro Asn Cys Val Ile Gln Asp Thr Thr Thr Val Leu Tyr Ala Leu
 20 25 30
 Asn Ser Phe Asp Pro Arg Leu Ser Asp Asp Thr His Arg Leu Gly Lys
 35 40 45
 Gln Ser Pro Leu Glu Ala Glu Asn Ala Leu Gly Glu Phe Ile Glu Gly
 50 55 60
 Leu Asp Thr Asn Ser Phe Pro Leu Glu Glu Val Ala Ile Pro Ile Leu
 65 70 75 80

Pro Gly Tyr His Phe Lys Phe Tyr Leu Ser Phe Ile Asn Arg Asp Asp
 85 90 95
 Gln Gly Val His Tyr Glu Val Leu Asp Gly Val Phe Leu Lys Thr Val
 100 105 110
 Ala Ala Cys Ile Ile Glu Asn Ser Phe Leu Thr Asp Ser Met Ser Pro
 115 120 125
 Glu Leu Leu Ser Glu Val Lys Glu Ala Leu Lys Arg
 130 135 140
 <210>193
 <211>416
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>193
 Asn Asp Asp Asp Pro Met Asp Glu Ser Asp Gly Glu Glu Ala Ser Lys
 1 5 10 15
 Asp Ser Ala Phe Ser Ala Ser Phe Ser Tyr Glu Phe Val Lys Ser Ser
 20 25 30
 Thr Arg Glu Ser Lys Asn Thr Val Thr His Ser Thr Ala Ser Arg Thr
 35 40 45
 Leu Tyr Ile Leu Arg Gln Asp Cys Ser Tyr Asp Pro Arg Ala Leu Lys
 50 55 60
 Val Asp Asp Glu Phe Arg Tyr Trp Val Glu Lys Arg Leu Asp Ala Lys
 65 70 75 80
 Asn Pro Asp Ser Leu Asn Ala Phe Val Lys Glu Val Gly Thr His Tyr
 85 90 95
 Val Ala Ser Val Thr Tyr Gly Gly Ile Gly Phe Gln Val Leu Lys Met
 100 105 110
 Ser Tyr Leu Gln Val Glu Glu Leu Glu Lys Glu Lys Ile Ser Ile Ser
 115 120 125
 Val Ala Ala Ala Ser Ser Leu Lys Ser Lys Thr Ser Asn Ala Thr
 130 135 140
 Glu Lys Gly Tyr Ser Ser Tyr Gln Ser Glu Ser Ser Ala Gln Thr Val
 145 150 155 160
 Phe Leu Gly Gly Thr Val Leu Pro Asp Leu Gln Gln Asp Lys Leu Asp
 165 170 175
 Phe Lys Asp Trp Ser Glu Ser Ile Pro Asn Glu Pro Ile Pro Leu Ala
 180 185 190
 Ile Ser Val Ser Ser Ile Thr Asp Leu Ile Ile Pro Glu Leu Phe Pro
 195 200 205
 Ser Glu Asp Ala Gln Val Leu Ser Gln Lys Lys Ser Ala Leu Gly Gln
 210 215 220
 Val Ile Leu Asn Tyr Leu Glu Ser His Lys Pro Lys Glu Glu Gly Pro
 225 230 235 240
 Lys Pro Val Gln Ile Thr Ser Gly Phe Asn Ser Ser Ser Ser Val Phe
 245 250 255
 Thr Leu Gln Ala Ala Lys Ala Pro Lys Thr Val Ser Phe Pro Tyr Ile
 260 265 270
 Asp Tyr Trp Ser Thr Ile Pro Tyr Leu Phe Pro Thr Leu Lys Glu Thr
 275 280 285
 Ser Gly Ala Gln Pro Leu Ser Phe Tyr Leu Arg Phe Asp Asp Ile Phe
 290 295 300
 Glu Gln Gln Asn Leu Val His Asn Thr Ser Tyr Ile Leu Ala Ser Thr
 305 310 315 320
 Ser Val Arg Leu Gly Tyr Phe Gly Asp Ser Tyr Arg Asp Tyr Asp Ala
 325 330 335
 Leu Ser Phe Tyr Gly Ser Trp Pro Gln Ala Tyr Phe Asp Trp Ala Gly
 340 345 350
 Tyr Lys Asp Arg Cys Thr Trp Thr Leu Glu Lys Leu Asn Thr Thr Gly
 355 360 365
 Asp Leu Phe Ile Arg Ser Gly Asp Glu Ile Arg Leu Lys His Asn Thr
 370 375 380
 Ser Gly Lys Tyr Leu Ala Thr Thr Ser Met Ser Asp Gly Tyr Gln Thr
 385 390 395 400
 Leu Thr Cys Thr Thr Gln Thr Ser Asp Ser Val Phe Ile Ile Thr Val

405 410 415

<210>194
 <211>303
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>194

Val Gly Gln Lys Arg Ala Asn Xaa Ser Lys Phe Ile Phe Leu Ile Ser
 1 5 10 15
 Glu Glu Ser Met Lys Gln Pro Met Ser Leu Ile Phe Ser Ser Val Cys
 20 25 30
 Leu Gly Leu Gly Leu Gly Ser Leu Ser Ser Cys Asn Gln Lys Pro Ser
 35 40 45
 Trp Asn Tyr His Asn Thr Ser Thr Ser Glu Glu Phe Phe Val His Gly
 50 55 60
 Asn Lys Ser Val Ser Gln Leu Pro His Tyr Pro Ser Ala Phe Arg Thr
 65 70 75 80
 Thr Gln Ile Phe Ser Glu Glu His Asn Asp Pro Tyr Val Val Ala Lys
 85 90 95
 Thr Asp Glu Glu Ser Arg Lys Ile Trp Arg Glu Ile His Lys Asn Leu
 100 105 110
 Lys Ile Lys Gly Ser Tyr Ile Pro Ile Ser Thr Tyr Gly Ser Leu Met
 115 120 125
 His Pro Lys Ser Ala Ala Leu Thr Leu Lys Thr Tyr Arg Pro His Pro
 130 135 140
 Ile Trp Ile Asn Gly Tyr Glu Arg Ser Phe Asn Ile Asp Thr Gly Lys
 145 150 155 160
 Tyr Leu Lys Asn Gly Ser Arg Arg Arg Thr Ser His Asp Gly Pro Lys
 165 170 175
 Asn Arg Ala Val Leu Asn Leu Ile Lys Ser Ser Gly Arg Arg Cys Asn
 180 185 190
 Ala Ile Gly Leu Glu Met Thr Glu Glu Asp Phe Val Ile Ala Arg Arg
 195 200 205
 Arg Glu Gly Val Tyr Ser Leu Tyr Pro Val Glu Val Cys Ser Tyr Pro
 210 215 220
 Gln Gly Asn Pro Phe Val Ile Ala Tyr Ala Trp Ile Ala Asp Glu Ser
 225 230 235 240
 Ala Cys Ser Lys Glu Val Leu Pro Val Lys Gly Tyr Tyr Ser Leu Val
 245 250 255
 Trp Glu Ser Val Ser Ser Ser Asp Ser Leu Asn Ala Phe Gly Asp Ser
 260 265 270
 Phe Ala Glu Asp Tyr Leu Arg Ser Thr Phe Leu Ala Asn Gly Thr Ser
 275 280 285
 Ile Leu Cys Val His Glu Ser Tyr Lys Lys Val Pro Pro Gln Pro
 290 295 300

<210>195

<211>88

<212>PRT

<213>Chlamydia pneumoniae

<400>195

Val Lys Glu Tyr Leu Asp Phe Leu Val Gln Arg Asn Val Glu Arg Asp
 1 5 10 15
 Pro Gln Thr Lys Arg His Cys Thr Val Ser Gln Lys Phe Gly Gly Glu
 20 25 30
 Ser Ile Asp Ala Lys Thr Thr Thr Gly Gln Leu Phe His Ile Ala Gly
 35 40 45
 Lys Thr Glu Pro Gly His Gly Lys Leu Cys Leu Gly Glu Ser Ile Leu
 50 55 60
 Lys Gln Leu Leu Ala Leu Gly Ile Ile Thr Gly Tyr Glu Asn Arg Glu
 65 70 75 80
 Arg Glu Val Trp Val Tyr Leu Asp
 85

<210>196

<211>203

<212>PRT

<213>Chlamydia pneumoniae

<400>196

Thr Ser Leu His Lys Ile Leu Asp Cys Lys Tyr Lys Pro Val Phe Ile
 1 5 10 15
 Gln Asn Thr Val Ala Ser Glu Thr Tyr Pro Ser Gln Ile Leu His Ala
 20 25 30
 Gln Arg Glu Val Arg Asp Ala Tyr Phe Asn Gln Ala Asp Cys His Pro
 35 40 45
 Ala Arg Ala Asn Gln Ile Leu Glu Ala Lys Lys Ile Cys Leu Leu Asp
 50 55 60
 Val Tyr His Thr Asn His Tyr Ser Val Phe Thr Phe Cys Val Asp Asn
 65 70 75 80
 Tyr Pro Asn Leu Arg Phe Thr Phe Val Ser Ser Lys Asn Asn Glu Met
 85 90 95
 Asn Gly Leu Ser Asn Pro Leu Asp Asn Val Leu Val Glu Ala Met Val
 100 105 110
 Arg Arg Thr His Ala Arg Asn Leu Leu Ala Ala Cys Lys Ile Arg Asn
 115 120 125
 Ile Glu Val Pro Arg Val Val Gly Leu Asp Leu Arg Ser Gly Ile Leu
 130 135 140
 Ile Ser Lys Leu Glu Leu Lys Gln Pro Gln Phe Gln Ser Leu Thr Glu
 145 150 155 160
 Asp Phe Val Asn His Ser Thr Asn Gln Glu Glu Ala Arg Val His Gln
 165 170 175
 Lys His Val Leu Leu Ile Ser Leu Ile Leu Leu Cys Lys Gln Ala Ala
 180 185 190
 Leu Glu Ser Phe Gln Glu Lys Lys Arg Ser Ser
 195 200

<210>197

<211>454

<212>PRT

<213>Chlamydia pneumoniae

<400>197

Met Lys Lys Val Leu Ile Ala Asn Arg Gly Glu Ile Ala Val Arg Ile
 1 5 10 15
 Ile Arg Ala Cys His Asp Leu Gly Leu Ser Thr Val Ala Val Tyr Ser
 20 25 30
 Leu Ala Asp Gln Glu Ala Leu His Val Leu Leu Ala Asp Glu Ala Ile
 35 40 45
 Cys Ile Gly Glu Pro Gln Ala Ala Lys Ser Tyr Leu Lys Ile Ser Asn
 50 55 60
 Ile Leu Ala Ala Cys Glu Ile Thr Gly Ala Asp Ala Val His Pro Gly
 65 70 75 80
 Tyr Gly Phe Leu Ser Glu Asn Ala Asn Phe Ala Ser Ile Cys Glu Ser
 85 90 95
 Cys Gly Leu Thr Phe Ile Gly Pro Ser Ser Glu Ser Ile Ala Met Met
 100 105 110
 Gly Asp Lys Ile Ala Ala Lys Ser Leu Ala Lys Lys Ile Lys Cys Pro
 115 120 125
 Val Ile Pro Gly Ser Glu Gly Ile Ile Glu Asp Glu Ser Glu Gly Leu
 130 135 140
 Lys Ile Ala Glu Lys Ile Gly Phe Pro Ile Val Ile Lys Ala Val Ala
 145 150 155 160
 Gly Gly Gly Gly Arg Gly Ile Arg Ile Val Lys Glu Lys Asp Glu Phe
 165 170 175
 Tyr Arg Ala Phe Ser Ala Ala Arg Ala Glu Ala Glu Ala Gly Phe Asn
 180 185 190
 Asn Pro Asn Val Tyr Ile Glu Lys Phe Ile Glu Asn Pro Arg His Leu
 195 200 205
 Glu Ile Gln Val Ile Gly Asp Thr His Gly Asn Tyr Val His Leu Gly
 210 215 220
 Glu Arg Asp Cys Thr Ile Gln Arg Arg Arg Gln Lys Leu Ile Glu Glu
 225 230 235 240
 Thr Pro Ser Pro Ile Leu Asn Ala Glu Ile Arg Val Lys Val Gly Lys

245 250 255
 Val Ala Val Asp Leu Ala Arg Ser Ala Gly Tyr Phe Ser Val Gly Thr
 260 265 270
 Val Glu Phe Leu Leu Asp Lys Asp Lys Lys Phe Tyr Phe Met Glu Met
 275 280 285
 Asn Thr Arg Ile Gln Val Glu His Thr Ile Thr Glu Glu Val Thr Gly
 290 295 300
 Ile Asp Leu Val Lys Glu Gln Ile His Val Ala Met Gly Asn Lys Leu
 305 310 315 320
 Pro Trp Lys Gln Lys Asn Ile Glu Phe Ser Gly His Ile Ile Gln Cys
 325 330 335
 Arg Ile Asn Ala Glu Asp Pro Thr Asn Asn Phe Ser Pro Ser Pro Gly
 340 345 350
 Arg Leu Asp Tyr Tyr Leu Pro Pro Ala Gly Pro Ser Ile Arg Val Asp
 355 360 365
 Gly Ala Cys Tyr Ser Gly Tyr Ala Ile Pro Pro Tyr Tyr Asp Ser Met
 370 375 380
 Ile Ala Lys Val Ile Ala Lys Gly Lys Asn Arg Glu Glu Ala Ile Ala
 385 390 395 400
 Ile Met Lys Arg Ala Leu Lys Glu Phe His Ile Gly Gly Val Gln Ser
 405 410 415
 Thr Ile Pro Phe His Gln Phe Met Leu Asp Asn Pro Lys Phe Leu Glu
 420 425 430
 Ser Asn Tyr Asp Ile Asn Tyr Ile Asp Asn Leu Leu Ala Gln Gly Asn
 435 440 445
 Ser Phe Phe Lys Glu Phe
 450

<210>198

<211>167

<212>PRT

<213>Chlamydia pneumoniae

<400>198

Met Asp Leu Lys Gln Ile Glu Lys Leu Met Ile Ala Met Gly Arg Asn
 1 5 10 15
 Gly Met Lys Arg Phe Ala Ile Lys Arg Glu Gly Leu Glu Leu Glu Leu
 20 25 30
 Glu Arg Asp Thr Arg Glu Gly Asn Arg Gln Glu Pro Val Phe Tyr Asp
 35 40 45
 Ser Arg Leu Phe Ser Gly Phe Ser Gln Glu Arg Pro Ile Pro Thr Asp
 50 55 60
 Pro Lys Lys Asp Thr Ile Lys Glu Thr Thr Thr Glu Asn Ser Glu Thr
 65 70 75 80
 Ser Thr Thr Thr Ser Ser Gly Asp Phe Ile Ser Ser Pro Leu Val Gly
 85 90 95
 Thr Phe Tyr Gly Ser Pro Ala Pro Asp Ser Pro Ser Phe Val Lys Pro
 100 105 110
 Gly Asp Ile Val Ser Glu Asp Thr Ile Val Cys Ile Val Glu Ala Met
 115 120 125
 Lys Val Met Asn Glu Val Lys Ala Gly Met Ser Gly Arg Val Leu Glu
 130 135 140
 Val Leu Ile Thr Asn Gly Asp Pro Val Gln Phe Gly Ser Lys Leu Phe
 145 150 155 160
 Arg Ile Ala Lys Asp Ala Ser
 165

<210>199

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>199

Met Val Leu Ser Ser Gln Leu Ser Val Gly Met Phe Ile Ser Thr Lys
 1 5 10 15
 Asp Gly Leu Tyr Lys Val Thr Ser Val Ser Lys Val Ala Gly Pro Lys
 20 25 30
 Gly Glu Ser Phe Ile Lys Val Ala Leu Gln Ala Ala Asp Ser Asp Val

35 40 45
 Val Ile Glu Arg Asn Phe Lys Ala Thr Gln Glu Val Lys Glu Ala Gln
 50 55 60
 Phe Glu Thr Arg Thr Leu Glu Tyr Leu Tyr Leu Glu Asp Glu Ser Tyr
 65 70 75 80
 Leu Phe Leu Asp Leu Gly Asn Tyr Glu Lys Leu Phe Ile Pro Gln Glu
 85 90 95
 Ile Met Lys Asp Asn Phe Leu Phe Leu Lys Ala Gly Val Thr Val Ser
 100 105 110
 Ala Met Val Tyr Asp Asn Val Val Phe Ser Val Glu Leu Pro His Phe
 115 120 125
 Leu Glu Leu Met Val Ser Lys Thr Asp Phe Pro Gly Asp Ser Leu Ser
 130 135 140
 Leu Ser Gly Gly Val Lys Lys Ala Leu Leu Glu Thr Gly Ile Glu Val
 145 150 155 160
 Met Val Pro Pro Phe Val Glu Ile Gly Asp Val Ile Lys Ile Asp Thr
 165 170 175
 Arg Thr Cys Glu Tyr Ile Gln Arg Val
 180 185

<210>200

<211>229

<212>PRT

<213>Chlamydia pneumoniae

<400>200

Val Lys Lys Gln Glu Ser Val Leu Val Gly Pro Ser Ile Met Gly Ala
 1 5 10 15
 Asp Leu Thr Cys Leu Gly Val Glu Ala Lys Lys Leu Glu Gln Ala Gly
 20 25 30
 Ser Asp Phe Ile His Ile Asp Ile Met Asp Gly His Phe Val Pro Asn
 35 40 45
 Leu Thr Phe Gly Pro Gly Ile Ile Ala Ala Ile Asn Arg Ser Thr Asp
 50 55 60
 Leu Phe Leu Glu Val His Ala Met Ile Tyr Asn Pro Phe Glu Phe Ile
 65 70 75 80
 Glu Ser Phe Val Arg Ser Gly Ala Asp Arg Ile Ile Val His Phe Glu
 85 90 95
 Ala Ser Glu Asp Ile Lys Glu Leu Leu Ser Tyr Ile Lys Lys Cys Gly
 100 105 110
 Val Gln Ala Gly Leu Ala Phe Ser Pro Asp Thr Ser Ile Glu Phe Leu
 115 120 125
 Pro Ser Phe Leu Pro Phe Cys Asp Val Val Val Leu Met Ser Val Tyr
 130 135 140
 Pro Gly Phe Thr Gly Gln Ser Phe Leu Pro Asn Thr Ile Glu Lys Ile
 145 150 155 160
 Ala Phe Ala Arg His Ala Ile Lys Thr Leu Gly Leu Lys Asp Ser Cys
 165 170 175
 Leu Ile Glu Val Asp Gly Gly Ile Asp Gln Gln Ser Ala Pro Leu Cys
 180 185 190
 Arg Asp Ala Gly Ala Asp Ile Leu Val Thr Ala Ser Tyr Leu Phe Glu
 195 200 205
 Ala Asp Ser Leu Ala Met Glu Asp Lys Ile Leu Leu Leu Arg Gly Glu
 210 215 220
 Asn Tyr Gly Val Lys
 225

<210>201

<211>397

<212>PRT

<213>Chlamydia pneumoniae

<400>201

Pro Ile Lys Asp Lys Ile Leu Met Ser Ser Pro Val Asn Asn Thr Pro
 1 5 10 15
 Ser Ala Pro Asn Ile Pro Ile Pro Ala Pro Thr Thr Pro Gly Ile Pro
 20 25 30
 Thr Thr Lys Pro Arg Ser Ser Phe Ile Glu Lys Val Ile Ile Val Ala


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      35      40      45
Lys Tyr Ile Leu Phe Ala Ile Ala Ala Thr Ser Gly Ala Leu Gly Thr
      50      55      60
Ile Leu Gly Leu Ser Gly Ala Leu Thr Pro Gly Ile Gly Ile Ala Leu
      65      70      75      80
Leu Val Ile Phe Phe Val Ser Met Val Leu Leu Gly Leu Ile Leu Lys
      85      90      95
Asp Ser Ile Ser Gly Gly Glu Glu Arg Arg Leu Arg Glu Glu Val Ser
      100      105      110
Arg Phe Thr Ser Glu Asn Gln Arg Leu Thr Val Ile Thr Thr Thr Leu
      115      120      125
Glu Thr Glu Val Lys Asp Leu Lys Ala Ala Lys Asp Gln Leu Thr Leu
      130      135      140
Glu Ile Glu Ala Phe Arg Asn Glu Asn Gly Asn Leu Lys Thr Thr Ala
      145      150      155      160
Glu Asp Leu Glu Glu Gln Val Ser Lys Leu Ser Glu Gln Leu Glu Ala
      165      170      175
Leu Glu Arg Ile Asn Gln Leu Ile Gln Ala Asn Ala Gly Asp Ala Gln
      180      185      190
Glu Ile Ser Ser Glu Leu Lys Lys Leu Ile Ser Gly Trp Asp Ser Lys
      195      200      205
Val Val Glu Gln Ile Asn Thr Ser Ile Gln Ala Leu Lys Val Leu Leu
      210      215      220
Gly Gln Glu Trp Val Gln Glu Ala Gln Thr His Val Lys Ala Met Gln
      225      230      235      240
Glu Gln Ile Gln Ala Leu Gln Ala Glu Ile Leu Gly Met His Asn Gln
      245      250      255
Ser Thr Ala Leu Gln Lys Ser Val Glu Asn Leu Leu Val Gln Asp Gln
      260      265      270
Ala Leu Thr Arg Val Val Gly Glu Leu Leu Glu Ser Glu Asn Lys Leu
      275      280      285
Ser Gln Ala Cys Ser Ala Leu Arg Gln Glu Ile Glu Lys Leu Ala Gln
      290      295      300
His Glu Thr Ser Leu Gln Gln Arg Ile Asp Ala Met Leu Ala Gln Glu
      305      310      315      320
Gln Asn Leu Ala Glu Gln Val Thr Ala Leu Glu Lys Met Lys Gln Glu
      325      330      335
Ala Gln Lys Ala Glu Ser Glu Phe Ile Ala Cys Val Arg Asp Arg Thr
      340      345      350
Phe Gly Arg Arg Glu Thr Pro Pro Thr Thr Pro Val Val Glu Gly
      355      360      365
Asp Glu Ser Gln Glu Glu Asp Glu Gly Gly Thr Pro Pro Val Ser Gln
      370      375      380
Pro Ser Ser Pro Val Asp Arg Ala Thr Gly Asp Gly Gln
      385      390      395

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<210>202

<211>118

<212>PRT

<213>Chlamydia pneumoniae

<400>202

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Phe Ser Leu Val Asn Arg Glu Thr Ser Ser Leu Ser Leu Arg Ser Ser
  1      5      10      15
Pro Pro Leu Ile Glu Ser Leu Arg Ile Lys Pro Lys Ser Thr Ile Glu
      20      25      30
Thr Lys Lys Ile Thr Arg Arg Ala Ile Pro Ile Pro Gly Val Ser Ala
      35      40      45
Pro Asp Arg Pro Arg Ile Val Pro Ser Ala Pro Asp Val Ala Ala Ile
      50      55      60
Ala Asn Ser Met Tyr Leu Ala Thr Met Ile Thr Phe Ser Met Lys Leu
      65      70      75      80
Glu Arg Gly Phe Val Val Gly Ile Pro Gly Val Val Gly Ala Gly Ile
      85      90      95
Gly Met Phe Gly Ala Glu Gly Val Leu Phe Thr Gly Asp Asp Ile Arg
      100      105      110

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Ile Leu Ser Leu Gly
115

<210>203

<211>217

<212>PRT

<213>Chlamydia pneumoniae

<400>203

Met	His	Ser	Lys	Phe	Leu	Ser	Arg	Arg	Lys	Lys	Asn	Ser	Ser	His	Lys
1				5					10					15	
Glu	Glu	Thr	Ser	Trp	Asp	Cys	Ile	Ala	Ser	Ser	Tyr	Asn	Lys	Ile	Val
			20					25					30		
Gln	Asp	Lys	Gly	His	Tyr	Tyr	His	Arg	Glu	Thr	Ile	Leu	Pro	Gln	Leu
		35					40					45			
Leu	Pro	Ser	Leu	Thr	Leu	Gly	Ser	Lys	Ser	Ser	Val	Leu	Asp	Ile	Gly
	50					55					60				
Cys	Gly	Gln	Gly	Phe	Leu	Glu	Arg	Ala	Leu	Pro	Lys	Glu	Cys	Arg	Tyr
65					70					75				80	
Leu	Gly	Ile	Asp	Ile	Ser	Ser	Arg	Leu	Ile	Ala	Leu	Ala	Lys	Lys	Met
				85					90					95	
Arg	Ser	Val	Asn	Ser	His	Gln	Phe	Lys	Val	Ala	Asp	Leu	Ser	Lys	Arg
			100					105					110		
Leu	Glu	Phe	Val	Glu	Pro	Thr	Leu	Phe	Ser	His	Ala	Val	Ala	Ile	Leu
		115					120					125			
Ser	Leu	Gln	Asn	Met	Glu	Phe	Pro	Gly	Glu	Ala	Ile	Arg	Asn	Thr	Ala
	130					135					140				
Thr	Leu	Leu	Glu	Pro	Leu	Gly	Gln	Phe	Phe	Ile	Val	Leu	Asn	His	Pro
145					150					155					160
Cys	Phe	Arg	Ile	Pro	Arg	Ala	Ser	Ser	Trp	His	Tyr	Asp	Glu	Asn	Lys
				165					170					175	
Lys	Ser	Tyr	Leu	Ser	Ser	Tyr	Arg	Ser	Leu	Ser	Leu	Pro	Asn	Glu	Asn
			180					185					190		
Pro	Asn	His	Gly	Ser	Pro	Arg	Thr	Lys	Arg	Phe	Ala	Phe	Tyr	Pro	Leu
		195					200					205			
Leu	Ser	Leu	Ser	Ser	Lys	Leu	Leu	Val							
	210					215									

<210>204

<211>437

<212>PRT

<213>Chlamydia pneumoniae

<400>204

Lys	Thr	Xaa	Asn	Ser	Cys	Ile	Met	Phe	Arg	Lys	Leu	Phe	Pro	Phe	Ser
1				5					10					15	
Lys	Lys	Lys	Thr	Gly	Gln	Lys	Gln	Arg	Leu	Arg	Asn	Asn	Gly	Leu	Leu
			20					25					30		
Gln	Ala	Ile	Ile	Gln	Ser	Ile	Lys	Val	Leu	Leu	His	Asn	Glu	Ala	Ser
		35					40					45			
Lys	Glu	Ala	Cys	Val	Leu	Ser	Tyr	Tyr	Gly	Leu	Leu	Thr	Cys	Val	Pro
	50					55					60				
Ile	Leu	Val	Phe	Phe	Leu	Arg	Leu	Ser	Gln	His	Leu	Phe	Thr	Asn	Leu
65					70					75					80
Asn	Trp	Lys	Glu	Trp	Leu	Ile	Ile	Lys	Phe	Pro	Asp	Tyr	Lys	Lys	Pro
				85					90					95	
Ile	Val	Ala	Ile	Val	Glu	Ala	Ala	Tyr	His	Ala	Thr	Glu	Ser	Asn	Ile
			100					105					110		
Gly	Leu	Val	Leu	Val	Gly	Ser	Phe	Phe	Val	Phe	Cys	Trp	Ala	Gly	Ile
	115					120						125			
Leu	Met	Leu	Leu	Ser	Leu	Glu	Asp	Gly	Leu	Asn	Lys	Ile	Phe	Arg	Thr
	130					135					140				
Ser	Trp	Thr	Pro	Ile	Ser	Leu	Lys	Arg	Leu	Val	Ser	Tyr	Phe	Val	Ile
145					150					155					160
Thr	Leu	Val	Ser	Pro	Met	Ile	Phe	Ile	Ile	Val	Cys	Gly	Ser	Trp	Ile
				165					170					175	
Tyr	Ile	Thr	Gln	Ile	Met	Pro	Ile	Gln	Tyr	Ala	Lys	Leu	Phe	Ser	Leu
			180					185					190		

Ser His Ser Met Thr Leu Tyr Phe Ile Ser Arg Phe Pro Tyr
 195 200 205
 Leu Leu Leu Tyr Leu Ala Leu Phe Cys Cys Tyr Ala Phe Leu Pro Arg
 210 215 220
 Val Ala Ile Gln Lys Thr Ser Ala Leu Ile Ser Thr Leu Ile Ile Gly
 225 230 235 240
 Ser Val Trp Ile Val Phe Gln Lys Ala Phe Phe Ser Leu Gln Val Ser
 245 250 255
 Ile Phe Asn Tyr Ser Phe Thr Tyr Gly Ala Leu Val Ala Leu Pro Ser
 260 265 270
 Phe Leu Leu Leu Tyr Ile Tyr Thr Met Ile Tyr Leu Phe Gly Gly
 275 280 285
 Ala Leu Thr Phe Ile Ile Gln Asn Arg Gly Cys Thr Phe Ile Phe Leu
 290 295 300
 Gly Asp Lys Ile Leu Pro Ser Cys Tyr Leu Gln Leu Ile Thr Ser Thr
 305 310 315 320
 Tyr Ile Leu Ala Leu Thr Thr Arg Gln Phe Asn Glu Gly Leu Ser Pro
 325 330 335
 Leu Thr Ala Gln Phe Ile Ala Lys Gln Ser Lys Val Pro Ile Gly Glu
 340 345 350
 Val Ser Gln Cys Leu Asp Val Leu Glu Lys Glu Gly Phe Leu Phe Pro
 355 360 365
 Tyr Asn Asn Gly Tyr Gln Pro Val Phe Asn Phe Ser Glu Leu Thr Ile
 370 375 380
 Lys Asp Ile Ala Asp Lys Leu Leu His Arg Glu Ile Phe Lys Lys Phe
 385 390 395 400
 Asn Pro Asp Leu Gly Ile Thr Phe Ile Glu Asn Ser Phe Gln Asn Ile
 405 410 415
 Phe Asn Gln Ala Ser Lys Asn Lys Glu Asn Leu Thr Leu Ser Glu Ile
 420 425 430
 Ala Arg Arg Ile Lys
 435

<210>205

<211>313

<212>PRT

<213>Chlamydia pneumoniae

<400>205

Ala Asn Gln Met Lys Arg Arg Ser Trp Leu Lys Ile Leu Gly Ile Cys
 1 5 10 15
 Leu Gly Ser Ser Ile Val Leu Gly Phe Leu Ile Phe Leu Pro Gln Leu
 20 25 30
 Leu Ser Thr Glu Ser Gly Lys Tyr Leu Val Phe Ser Leu Ile His Lys
 35 40 45
 Glu Ser Gly Leu Ser Cys Ser Ala Glu Glu Leu Lys Ile Ser Trp Phe
 50 55 60
 Gly Arg Gln Thr Ala Arg Lys Ile Lys Leu Thr Gly Glu Ala Lys Asp
 65 70 75 80
 Glu Val Xaa Ser Ala Glu Lys Phe Glu Leu Asp Gly Ser Leu Leu Arg
 85 90 95
 Leu Leu Ile Tyr Lys Lys Pro Lys Gly Ile Thr Leu Ser Gly Trp Ser
 100 105 110
 Leu Lys Ile Asn Glu Pro Ala Ser Ile Asp His Pro Ser Val Ser His
 115 120 125
 Leu Asp Pro Gly Ser Leu Leu Thr Tyr Leu Asn Asp Cys Lys Ile Ile
 130 135 140
 Ser Glu His Gly Phe Ile Thr Met Lys Thr Val Ser Gly Ser Ser Leu
 145 150 155 160
 Ser Val Ser Gly Xaa Tyr Leu Glu Xaa Ser Ser Glu Lys Phe Met Thr
 165 170 175
 Lys Cys Val Val Ser Glu Asp Gln Gln Ser Gly Asn Ile Phe Ile Glu
 180 185 190
 Ser Val Leu Ser Pro Asp Val Ser Ile Ser Ala Gln Phe Ser Ser Val
 195 200 205
 Pro Val Ala Phe Phe Lys Ile Phe Ile Ala Ser Pro Phe Trp Asp His

210 215 220
 Leu Leu Ser Tyr Glu Asp Ile Ile Asn Leu Ser Ala Glu Ala Thr His
 225 230 235 240
 Thr Asn Asp Gly Lys Ile Ser Met Thr Ala Ser Gly Glu Gly Asn Gln
 245 250 255
 Ile Gln Met Lys Leu Gln Gly His Ile His Lys Ser Thr Phe Tyr Ile
 260 265 270
 Val Glu Gly Ser Ser Ser Phe Ile Glu Leu Lys Pro Glu Leu Ala Ser
 275 280 285
 Ala Leu Cys Asn Gln Ile Ile Pro Leu Ser Thr Pro Ile Thr Ser Lys
 290 295 300
 Gln Ile Xaa Cys Tyr Gly Leu Leu Cys
 305 310

<210>206

<211>275

<212>PRT

<213>Chlamydia pneumoniae

<400>206

Asn Leu Asn Leu Ser Ser Pro Gln Leu Phe Ala Thr Arg Ser Phe Arg
 1 5 10 15
 Cys Pro His Pro Leu Leu Val Ser Lys Ser Xaa Ala Thr Val Ser Tyr
 20 25 30
 Ala Lys Ile Pro Leu Asp Ile Thr Lys Trp Lys His Ile Glu Ile Thr
 35 40 45
 Ser Gln Ala Gln Leu Pro Glu Val Ala Ile His Pro Lys Asp Pro Asn
 50 55 60
 Leu Ala Leu Gln Leu Arg Asp Thr Lys Leu Gly Ile Lys Lys Thr Glu
 65 70 75 80
 Lys Xaa Ser Asp Ile Arg Tyr Ser Ser Ser Thr Val Leu Gly Gly Ala
 85 90 95
 Ser Pro Ser His Leu Asn Gly Leu Ile Ser Ile Asp Asn Lys Lys His
 100 105 110
 Leu Thr Lys Phe Arg Leu Gln Gln Ala Gln Leu Pro His Thr Tyr Leu
 115 120 125
 Arg Ala Ile Phe Pro Gln Pro Phe Val Ile Asn Val Pro Leu Asp Val
 130 135 140
 Ala Tyr Tyr Ser Leu Asn Ile Glu Gly Thr Tyr Lys Asn Ala His Leu
 145 150 155 160
 Glu Ala Asp Ala Ile Leu Asp Asn Pro Leu Leu Lys Leu Ser Cys Ser
 165 170 175
 Met Ser Gly Ala Trp Lys Asn Phe Leu Phe Lys Gly Gln Gly Thr Tyr
 180 185 190
 His Phe Asn Lys Lys Trp Gln Glu Ile Leu Ser Pro His Phe Ser Tyr
 195 200 205
 Ala Glu Ala Arg Phe Ser Gly Lys Ala Gln Ile Thr Asp Thr Asn Leu
 210 215 220
 Phe Phe Pro Lys Phe Ser Gly Lys Ile Thr Ala Arg Glu Asn Glu Leu
 225 230 235 240
 Leu Ile His Ala Lys Phe Gly Ser Pro Asn Glu Pro Ile Lys Pro Glu
 245 250 255
 Thr Thr Ser Ile Leu Ile His Gly Gln Phe Cys Ser Leu Pro Thr Gln
 260 265 270
 Pro Ser Phe
 275

<210>207

<211>231

<212>PRT

<213>Chlamydia pneumoniae

<400>207

Asn Leu Lys Leu Pro Leu Tyr Ser Ser Thr Asp Asn Phe Val Leu Cys
 1 5 10 15
 Gln Leu Ser Leu Val Ser Asn His Leu Ala Pro Phe His Leu Lys Lys
 20 25 30
 Leu Thr Phe Ser Phe His Thr Asp Gly Gly Lys Phe Val Thr Lys Gly

35	40	45
Asn Leu Gln Ala Leu Ile Glu Asn Pro Asp Tyr Pro Asp Leu Asn Asn		
50	55	60
Thr Arg Ile Leu Ile Pro Asp Leu Leu Leu Ser Leu Asp Glu Ser Ser		
65	70	75
Thr Ser Pro Ser Ser Lys Asp Leu Lys Ile Gln Gly Ser Gly Glu Ile		
85	90	95
Phe Ser Leu Pro Leu Asp Ser Ile Thr Lys Thr Tyr Gly Lys Gln Val		
100	105	110
Arg Leu Ser Pro Tyr Phe Gly Ser Ser Gly Asp Leu Asn Phe Val Val		
115	120	125
Asn Tyr Asn Pro Lys Asp Gln Asn Lys Leu Thr Leu Leu Ser Xaa Phe		
130	135	140
Lys Ser Glu Ala Leu Leu Gly Glu Leu Lys Leu Val Met Asp Phe Ser		
145	150	155
Met Lys Leu Ser Ser Gly Thr Gln Gly Thr Leu Gln Trp Glu Val Ser		
165	170	175
Pro Glu Arg Tyr Ala Ser Phe Phe Lys Asn Ala Ser Cys Ser Pro Thr		
180	185	190
Cys Leu Leu His Arg Thr Ala Asn Val Arg Leu Asp Ile Ser Lys Leu		
195	200	205
Ser Cys Pro Glu Glu Thr Lys Gly Leu Ser Cys Leu Thr Leu Leu Ala		
210	215	220
Ala Glu Asp Leu Lys Val His		
225	230	

<210>208

<211>415

<212>PRT

<213>Chlamydia pneumoniae

<400>208

Asn Cys Lys Cys Thr Leu Arg His Leu Lys Thr Leu Leu Ser Arg Gly	
1	5
Asn Gln Arg Phe Ile Leu Ser His Ala Ser Cys Arg Arg Gly Leu Glu	
20	25
Gly Ser Leu Glu Ala Thr Pro Leu Ile Phe Tyr Asp Asn Val Ser Lys	
35	40
Glu Thr Phe Ile Ile Asn Asp Phe Xaa Gly Ser Leu Arg Ala Asn Asn	
50	55
Leu Asp Ala Lys Ile Glu Tyr Asp Leu Lys Gly Ser Cys Leu Ala Pro	
65	70
Arg Gln Asp Ser Lys Thr Leu Ala Glu Phe Ser Leu Glu Gly Gln Val	
85	90
Asp His Leu Phe Ser Pro Glu Ser Arg Glu Phe Lys Gln Thr Ala Asn	
100	105
Trp Ile His Ile Pro Ser Ser Phe Ile Ala Gly Ile Ile Pro Met Ser	
115	120
Pro Gly Leu Lys Ala Gln Ile Ser Ser Leu Ala Gly Pro Arg Ile Asn	
130	135
Val Ser Ile Lys Asn Ala Phe Arg Phe Gly Glu Gly Pro Val Asp Ile	
145	150
Met Val Asp Ser Glu Asn Leu Gln Ala Gln Ile Pro Leu Ile Leu Asn	
165	170
Glu Lys Ser Ile Leu Leu Arg Glu Asn Leu Thr Ala His Leu Ser Ile	
180	185
Asn Glu Asp Val Asn Lys Ala Phe Leu Gln Glu Phe Asn Pro Leu Leu	
195	200
Ala Gly Gly Ala Tyr Ser Gln Tyr Pro Val Thr Leu Glu Ile Asp Lys	
210	215
Gln Asn Phe Tyr Leu Pro Ile Arg Pro Tyr Ser Phe Glu Glu Phe Arg	
225	230
Ile Gln Ser Ala Thr Leu Asp Met Gly Lys Ile Ser Ile Ala Asn Thr	
245	250
Gly Thr Met Tyr Ala Leu Phe Gln Phe Leu Asp Ile Thr Asp Gln Lys	
260	265
	270

Gln Phe Val Glu Ser Trp Phe Thr Pro Ile Phe Phe Ser Val Gln Lys
 275 280 285
 Gly Ser Ile Ile Cys Lys Arg Leu Asp Ala Leu Ile Asp Arg Arg Ile
 290 295 300
 Arg Leu Ala Leu Trp Gly Lys Thr Asp Ile Ala His Asp Arg Leu Phe
 305 310 315 320
 Met Thr Leu Gly Ile Asp Pro Glu Val Ile Lys Lys Tyr Phe His Asn
 325 330 335
 Thr Ser Leu Lys Thr Lys Asn Phe Phe Leu Ile Lys Ile Arg Gly Ser
 340 345 350
 Ile Ser Ser Pro Glu Val Asp Trp Ser Ser Ala Tyr Ala Arg Ile Ala
 355 360 365
 Leu Leu Lys Ser Tyr Ser Leu Gly Asn Pro Phe Ser Ser Leu Ala Asp
 370 375 380
 Lys Leu Phe Ser Ser Leu Gly Asp Ser Thr Pro Pro Pro Thr Val His
 385 390 395 400
 Pro Phe Pro Trp Glu Lys Ser Asn Phe Asp Ser Ile Glu Asn Lys
 405 410 415

<210>209

<211>458

<212>PRT

<213>Chlamydia pneumoniae

<400>209

Leu Leu Gly Ile Lys Leu Met Arg Lys Arg His Ser Phe Asp Ser Thr
 1 5 10 15
 Ser Thr Lys Lys Glu Ala Val Ser Lys Ala Ile Gln Lys Ile Ile Lys
 20 25 30
 Ile Met Glu Thr Thr Asp Pro Ser Leu Asn Val Glu Thr Pro Asn Ala
 35 40 45
 Glu Ile Glu Ser Ile Leu Gln Glu Ile Lys Glu Ile Lys Gln Lys Leu
 50 55 60
 Ser Lys Gln Ala Glu Asp Leu Gly Leu Leu Glu Lys Tyr Cys Ser Gln
 65 70 75 80
 Glu Thr Leu Ser Asn Leu Glu Asn Thr Asn Ala Ser Leu Lys Leu Ser
 85 90 95
 Ile Gly Ser Val Ile Glu Glu Leu Ala Ser Leu Lys Gln Leu Val Glu
 100 105 110
 Glu Ser Ile Glu Glu Ser Leu Gly Gln Gln Asp Gln Leu Ile Gln Ser
 115 120 125
 Val Leu Ile Glu Ile Ser Asp Lys Phe Leu Ser Ser Ile Gly Glu Thr
 130 135 140
 Leu Ser Gly Asn Leu Asp Met Asn Gln Asn Val Ile Gln Gly Leu Leu
 145 150 155 160
 Ile Lys Glu Asn Pro Glu Lys Ser Glu Ala Ala Ser Val Gly Tyr Val
 165 170 175
 Gln Thr Leu Leu Glu Pro Leu Ser Lys Arg Ile Gly Glu Thr His Lys
 180 185 190
 Lys Val Ala Thr His Asp Val Asn Ile Ser Ser Leu Gln Phe His Met
 195 200 205
 Met Ser Val Ala Gly Gly Arg Phe Arg Gly His Ile Asp Met Asn Gly
 210 215 220
 Tyr Arg Val Leu Gly Leu Gly Glu Pro Lys Asn Gly Glu Asp Ala Val
 225 230 235 240
 Ser Lys Asp Tyr Leu Glu Arg Tyr Val Ser Ser Gln Leu Thr Ile Asp
 245 250 255
 Lys Val Glu Asp Lys Pro Ile Thr Lys Pro Asn Lys Gly Lys Leu Leu
 260 265 270
 Tyr Ser Gln Gly Thr Ser Pro Lys Leu Glu Gly Pro Leu Pro Leu Gly
 275 280 285
 Leu Leu Thr Ser Gly Ile Ser Gly Phe Thr Trp Lys Ser Ala Ser Lys
 290 295 300
 Ser Asn Asp Gly Ser Phe Pro Phe Ser Ala Leu Arg His Lys Glu Thr
 305 310 315 320
 Glu Ser Asp Thr Asp Cys Phe Gln Ile Thr Ser Thr Thr Leu Ser Gly

325 330 335
 Asn Gln Ala Gly Thr Tyr Thr Trp Ser Leu Ser Leu Lys Val Leu Val
 340 345 350
 Pro Ser Ile Phe Gln Ile Glu Lys Pro Glu Val Gln Leu Ser Leu Val
 355 360 365
 Tyr Ser Tyr Glu Asp Trp Leu Pro Ile Asp Asn Ile Phe Asn Met Ser
 370 375 380
 Gln Pro Arg Thr Ile Pro Leu Ala Leu Leu Gly Gln Thr Met Leu Ala
 385 390 395 400
 Gly Gln Lys Tyr Asp Ile Leu Glu Leu Ala Ala His Gln Thr Asn Gln
 405 410 415
 Thr Leu Met Ile Ser Pro Asn Cys Ser Arg Phe Ser Leu Gln Leu Lys
 420 425 430
 Gln Thr Asn Gln Phe Glu Asn Ser Pro Val Asp Phe Tyr Ile Val His
 435 440 445
 Ala Ala His Ser Cys His Trp Ser Gly Phe
 450 455

<210>210

<211>226

<212>PRT

<213>Chlamydia pneumoniae

<400>210

Met Thr Ile Arg Val Arg Asn Leu Ala Tyr Ser Val Asn Lys Lys Lys
 1 5 10 15
 Ile Leu Asp Gly Val Thr Phe Ser Leu Glu Arg Gly His Ile Thr Leu
 20 25 30
 Phe Val Gly Lys Ser Gly Ser Gly Lys Thr Met Ile Leu Arg Ala Leu
 35 40 45
 Ala Gly Leu Val Gln Pro Thr Gln Gly Asp Ile Trp Ile Glu Gly Glu
 50 55 60
 Ala Pro Ala Leu Val Phe Gln Gln Pro Glu Leu Phe Ser His Met Thr
 65 70 75 80
 Val Leu Gly Asn Cys Thr His Pro Gln Ile His Ile Lys Gly Arg Ser
 85 90 95
 Thr Glu Glu Ala Arg Glu Lys Ala Phe Glu Leu Leu His Leu Leu Asp
 100 105 110
 Ile Glu Glu Val Ala Lys Asn Tyr Pro Asp Gln Leu Ser Gly Gly Gln
 115 120 125
 Lys Gln Arg Val Ala Ile Val Arg Ser Leu Cys Met Asp Lys His Thr
 130 135 140
 Leu Leu Phe Asp Glu Pro Thr Ser Ala Leu Asp Pro Phe Ala Thr Ala
 145 150 155 160
 Ser Phe Arg His Leu Leu Glu Thr Leu Arg Asp Gln Glu Leu Thr Val
 165 170 175
 Gly Leu Thr Thr His Asp Met Gln Phe Val His Ser Cys Leu Asp Arg
 180 185 190
 Ile Tyr Leu Ile Asp Gln Gly Thr Val Ala Gly Val Tyr Asp Lys Arg
 195 200 205
 Asp Gly Glu Leu Asp Ser Gly His Pro Leu Ser Lys Tyr Ile His Ser
 210 215 220
 Ala Gln
 225

<210>211

<211>220

<212>PRT

<213>Chlamydia pneumoniae

<400>211

Glu Val Gly Val Asp His Trp Leu Ala Ile Ala Arg Leu Leu Leu Arg
 1 5 10 15
 Gly Cys Gly Tyr Thr Leu Cys Val Ser Gly Ile Gly Ile Leu Cys Gly
 20 25 30
 Ser Ile Leu Gly Leu Leu Ile Gly Thr Val Thr Ser Leu Tyr Phe Pro
 35 40 45
 Ser Lys Leu Thr Lys Leu Leu Ala Asn Ser Tyr Val Thr Val Ile Arg

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      50                      55                      60
Gly Thr Pro Leu Phe Ile Gln Ile Leu Ile Ile Tyr Phe Gly Leu Pro
 65                      70                      75                      80
Glu Val Leu Pro Ile Glu Pro Thr Pro Leu Val Ala Gly Ile Ile Ala
                      85                      90                      95
Leu Ser Met Asn Ser Ala Ala Tyr Leu Ala Glu Asn Ile Arg Gly Gly
                      100                      105                      110
Ile Asn Ser Leu Ser Ile Gly Gln Trp Glu Ser Ala Met Val Leu Gly
                      115                      120                      125
Tyr Lys Lys Tyr Gln Ile Phe Val Tyr Ile Ile Tyr Pro Gln Val Phe
                      130                      135                      140
Lys Asn Ile Leu Pro Ser Leu Thr Asn Glu Phe Val Ser Leu Ile Lys
145                      150                      155                      160
Glu Ser Ser Ile Leu Met Val Val Gly Val Pro Glu Leu Thr Lys Val
                      165                      170                      175
Thr Lys Asp Ile Val Ser Arg Glu Leu Asn Pro Met Glu Met Tyr Leu
                      180                      185                      190
Ile Cys Ala Gly Leu Tyr Phe Leu Met Thr Thr Ser Phe Ser Cys Ile
                      195                      200                      205
Ser Arg Leu Ser Glu Lys Arg Arg Ser Tyr Asp Asn
                      210                      215                      220

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<210>212

<211>147

<212>PRT

<213>Chlamydia pneumoniae

<400>212

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Met Lys Lys Lys Val Thr Ile Asp Glu Ala Leu Lys Glu Ile Leu Arg
 1                      5                      10                      15
Leu Glu Gly Ala Ala Thr Gln Glu Glu Leu Cys Ala Lys Leu Leu Ala
                      20                      25                      30
Gln Gly Phe Ala Thr Thr Gln Ser Ser Val Ser Arg Trp Leu Arg Lys
                      35                      40                      45
Ile Gln Ala Val Lys Val Ala Gly Glu Arg Gly Ala Arg Tyr Ser Leu
                      50                      55                      60
Pro Ser Ser Thr Glu Lys Thr Thr Thr Arg His Leu Val Leu Ser Ile
 65                      70                      75                      80
Arg His Asn Ala Ser Leu Ile Val Ile Arg Thr Val Pro Gly Ser Ala
                      85                      90                      95
Ser Trp Ile Ala Ala Leu Leu Asp Gln Gly Leu Lys Asp Glu Ile Leu
                      100                      105                      110
Gly Thr Leu Ala Gly Asp Asp Thr Ile Phe Val Thr Pro Ile Asp Glu
                      115                      120                      125
Gly Arg Leu Pro Leu Leu Met Val Ser Ile Ala Asn Leu Leu Gln Val
                      130                      135                      140
Phe Leu Asp
145

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<210>213

<211>344

<212>PRT

<213>Chlamydia pneumoniae

<400>213

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Met Leu Thr Leu Gly Leu Glu Ser Ser Cys Asp Glu Thr Ala Cys Ala
 1                      5                      10                      15
Ile Val Asn Glu Asp Lys Gln Ile Leu Ala Asn Ile Ile Ala Ser Gln
                      20                      25                      30
Asp Ile His Ala Ser Tyr Gly Gly Val Val Pro Glu Leu Ala Ser Arg
                      35                      40                      45
Ala His Leu His Ile Phe Pro Gln Val Ile Asn Lys Ala Leu Gln Gln
                      50                      55                      60
Ala Asn Leu Leu Ile Glu Asp Met Asp Leu Ile Ala Val Thr Gln Thr
 65                      70                      75                      80
Pro Gly Leu Ile Gly Ser Leu Ser Val Gly Val His Phe Gly Lys Gly
                      85                      90                      95
Ile Ala Ile Gly Ala Lys Lys Ser Leu Ile Gly Val Asn His Val Glu

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100 105 110
 Ala His Leu Tyr Ala Ala Tyr Met Ala Ala Gln Asn Val Gln Phe Pro
 115 120 125
 Ala Leu Gly Leu Val Val Ser Gly Ala His Thr Ala Ala Phe Phe Ile
 130 135 140
 Glu Asn Pro Thr Ser Tyr Lys Leu Ile Gly Lys Thr Arg Asp Asp Ala
 145 150 155 160
 Ile Gly Glu Thr Phe Asp Lys Val Gly Arg Phe Leu Gly Leu Pro Tyr
 165 170 175
 Pro Ala Gly Pro Leu Ile Glu Lys Leu Ala Leu Glu Gly Ser Glu Asp
 180 185 190
 Ser Tyr Pro Phe Ser Pro Ala Lys Val Pro Asn Tyr Asp Phe Ser Phe
 195 200 205
 Ser Gly Leu Lys Thr Ala Val Leu Tyr Ala Ile Lys Gly Asn Asn Ser
 210 215 220
 Ser Pro Arg Ser Pro Ala Pro Glu Ile Ser Leu Glu Lys Gln Arg Asp
 225 230 235 240
 Ile Ala Ala Ser Phe Gln Lys Ala Ala Cys Thr Thr Ile Ala Gln Lys
 245 250 255
 Leu Pro Thr Ile Ile Lys Glu Phe Ser Cys Arg Ser Ile Leu Ile Gly
 260 265 270
 Gly Gly Val Ala Ile Asn Glu Tyr Phe Arg Ser Ala Ile Gln Thr Ala
 275 280 285
 Cys Asn Leu Pro Val Tyr Phe Pro Pro Ala Lys Leu Cys Ser Asp Asn
 290 295 300
 Ala Ala Met Ile Ala Gly Leu Gly Gly Glu Asn Phe Gln Lys Asn Ser
 305 310 315 320
 Ser Ile Pro Glu Ile Arg Ile Cys Ala Arg Tyr Gln Trp Glu Ser Val
 325 330 335
 Ser Pro Phe Ser Leu Ala Ser Pro
 340

<210>214

<211>514

<212>PRT

<213>Chlamydia pneumoniae

<400>214

Met Arg Lys Ile Ser Val Gly Ile Cys Ile Thr Ile Leu Leu Ser Leu
 1 5 10 15
 Ser Val Val Leu Gln Gly Cys Lys Glu Ser Ser His Ser Ser Thr Ser
 20 25 30
 Arg Gly Glu Leu Ala Ile Asn Ile Arg Asp Glu Pro Arg Ser Leu Asp
 35 40 45
 Pro Arg Gln Val Arg Leu Leu Ser Glu Ile Ser Leu Val Lys His Ile
 50 55 60
 Tyr Glu Gly Leu Val Gln Glu Asn Asn Leu Ser Gly Asn Ile Glu Pro
 65 70 75 80
 Ala Leu Ala Glu Asp Tyr Ser Leu Ser Ser Asp Gly Leu Thr Tyr Thr
 85 90 95
 Phe Lys Leu Lys Ser Ala Phe Trp Ser Asn Gly Asp Pro Leu Thr Ala
 100 105 110
 Glu Asp Phe Ile Glu Ser Trp Lys Gln Val Ala Thr Gln Glu Val Ser
 115 120 125
 Gly Ile Tyr Ala Phe Ala Leu Asn Pro Ile Lys Asn Val Arg Lys Ile
 130 135 140
 Gln Glu Gly His Leu Ser Ile Asp His Phe Gly Val His Ser Pro Asn
 145 150 155 160
 Glu Ser Thr Leu Val Val Thr Leu Glu Ser Pro Thr Ser His Phe Leu
 165 170 175
 Lys Leu Leu Ala Leu Pro Val Phe Phe Pro Val His Lys Ser Gln Arg
 180 185 190
 Thr Leu Gln Ser Lys Ser Leu Pro Ile Ala Ser Gly Ala Phe Tyr Pro
 195 200 205
 Lys Asn Ile Lys Gln Lys Gln Trp Ile Lys Leu Ser Lys Asn Pro His
 210 215 220

Tyr Tyr Asn Gln Ser Val Glu Thr Lys Thr Ile Th e His Phe
 225 230 235 240
 Ile Pro Asp Ala Asn Thr Ala Ala Lys Leu Phe Asn Gln Gly Lys Leu
 245 250 255
 Asn Trp Gln Gly Pro Pro Trp Gly Glu Arg Ile Pro Gln Glu Thr Leu
 260 265 270
 Ser Asn Leu Gln Ser Lys Gly His Leu His Ser Phe Asp Val Ala Gly
 275 280 285
 Thr Ser Trp Leu Thr Phe Asn Ile Asn Lys Phe Pro Leu Asn Asn Met
 290 295 300
 Lys Leu Arg Glu Ala Leu Ala Ser Ala Leu Asp Lys Glu Ala Leu Val
 305 310 315 320
 Ser Thr Ile Phe Leu Gly Arg Ala Lys Thr Ala Asp His Leu Leu Pro
 325 330 335
 Thr Asn Ile His Ser Tyr Pro Glu His Gln Lys Gln Glu Met Ala Gln
 340 345 350
 Arg Gln Ala Tyr Ala Lys Lys Leu Phe Lys Glu Ala Leu Glu Glu Leu
 355 360 365
 Gln Ile Thr Ala Lys Asp Leu Glu His Leu Asn Leu Ile Phe Pro Val
 370 375 380
 Ser Ser Ser Ala Ser Ser Leu Leu Val Gln Leu Ile Arg Glu Gln Trp
 385 390 395 400
 Lys Glu Ser Leu Gly Phe Ala Ile Pro Ile Val Gly Lys Glu Phe Ala
 405 410 415
 Leu Leu Gln Ala Asp Leu Ser Ser Gly Asn Phe Ser Leu Ala Thr Gly
 420 425 430
 Gly Trp Phe Ala Asp Phe Ala Asp Pro Met Ala Phe Leu Thr Ile Phe
 435 440 445
 Ala Tyr Pro Ser Gly Val Pro Pro Tyr Ala Ile Asn His Lys Asp Phe
 450 455 460
 Leu Glu Ile Leu Gln Asn Ile Glu Gln Glu Gln Asp His Gln Lys Arg
 465 470 475 480
 Ser Glu Leu Val Ser Gln Ala Ser Leu Tyr Leu Glu Thr Phe His Ile
 485 490 495
 Ile Glu Pro Ile Tyr His Asp Ala Phe Gln Phe Ala Met Asn Lys Lys
 500 505 510
 Leu Ser

<210>215

<211>494

<212>PRT

<213>Chlamydia pneumoniae

<400>215

Lys Glu Met Pro Arg Ser Leu Asp Pro Gly Lys Thr Arg Leu Ile Ala
 1 5 10 15
 Asp Gln Thr Leu Met Arg His Leu Tyr Glu Gly Leu Val Glu Glu His
 20 25 30
 Ser Gln Asn Gly Glu Ile Lys Pro Ala Leu Ala Glu Ser Tyr Thr Ile
 35 40 45
 Ser Glu Asp Gly Thr Arg Tyr Thr Phe Lys Ile Lys Asn Ile Leu Trp
 50 55 60
 Ser Asn Gly Asp Pro Leu Thr Ala Gln Asp Phe Val Ser Ser Trp Lys
 65 70 75 80
 Glu Ile Leu Lys Glu Asp Ala Ser Ser Val Tyr Leu Tyr Ala Phe Leu
 85 90 95
 Pro Ile Lys Asn Ala Arg Ala Ile Phe Asp Asp Thr Glu Ser Pro Glu
 100 105 110
 Asn Leu Gly Val Arg Ala Leu Asp Lys Arg His Leu Glu Ile Gln Leu
 115 120 125
 Glu Thr Pro Cys Ala His Phe Leu His Phe Leu Thr Leu Pro Ile Phe
 130 135 140
 Phe Pro Val His Glu Thr Leu Arg Asn Tyr Ser Thr Ser Phe Glu Glu
 145 150 155 160
 Met Pro Ile Thr Cys Gly Ala Phe Arg Pro Val Ser Leu Glu Lys Gly

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      165      170      75
Leu Arg Leu His Leu Glu Lys Asn Pro Met Tyr His Asn Lys Ser Arg
      180      185      190
Val Lys Leu His Lys Ile Ile Val Gln Phe Ile Ser Asn Ala Asn Thr
      195      200      205
Ala Ala Ile Leu Phe Lys His Lys Lys Leu Asp Trp Gln Gly Pro Pro
      210      215      220
Trp Gly Glu Pro Ile Pro Pro Glu Ile Ser Ala Ser Leu His Gln Asp
      225      230      235
Asp Gln Leu Phe Ser Leu Pro Gly Ala Ser Thr Thr Trp Leu Leu Phe
      245      250      255
Asn Ile Gln Lys Lys Pro Trp Asn Asn Ala Lys Leu Arg Lys Ala Leu
      260      265      270
Ser Leu Ala Ile Asp Lys Asp Met Leu Thr Lys Val Val Tyr Gln Gly
      275      280      285
Leu Ala Glu Pro Thr Asp His Ile Leu His Pro Arg Leu Tyr Pro Gly
      290      295      300
Thr Tyr Pro Glu Arg Lys Arg Gln Asn Glu Arg Ile Leu Glu Ala Gln
      305      310      315
Gln Leu Phe Glu Glu Ala Leu Asp Glu Leu Gln Met Thr Arg Glu Asp
      325      330      335
Leu Glu Lys Glu Thr Leu Thr Phe Ser Thr Phe Ser Phe Ser Tyr Gly
      340      345      350
Arg Ile Cys Gln Met Leu Arg Glu Gln Trp Lys Lys Val Leu Lys Phe
      355      360      365
Thr Ile Pro Ile Val Gly Gln Glu Phe Phe Thr Ile Gln Lys Asn Phe
      370      375      380
Leu Glu Gly Asn Tyr Ser Leu Thr Val Asn Gln Trp Thr Ala Ala Phe
      385      390      395
Ile Asp Pro Met Ser Tyr Leu Met Ile Phe Ala Asn Pro Gly Gly Ile
      405      410      415
Ser Pro Tyr His Leu Gln Asp Ser His Phe Gln Thr Leu Leu Ile Lys
      420      425      430
Ile Thr Gln Glu His Lys Lys His Leu Arg Asn Gln Leu Ile Ile Glu
      435      440      445
Ala Leu Asp Tyr Leu Glu His Cys His Ile Leu Glu Pro Leu Cys His
      450      455      460
Pro Asn Leu Arg Ile Ala Leu Asn Lys Asn Ile Lys Asn Phe Asn Leu
      465      470      475
Phe Val Arg Arg Thr Ser Asp Phe Arg Phe Ile Glu Lys Leu
      485      490

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<210>216

<211>448

<212>PRT

<213>Chlamydia pneumoniae

<400>216

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Leu Lys Phe Asp Ser Lys Phe Ile Lys Val Ile Phe Lys Met Phe Ser
  1           5           10           15
Arg Trp Ile Thr Leu Phe Leu Leu Phe Ile Ser Leu Thr Gly Cys Ser
      20           25           30
Ser Tyr Ser Ser Lys His Lys Gln Ser Leu Ile Ile Pro Ile His Asp
      35           40           45
Asp Pro Val Ala Phe Ser Pro Glu Gln Ala Lys Arg Ala Met Asp Leu
      50           55           60
Ser Ile Ala Gln Leu Leu Phe Asp Gly Leu Thr Arg Glu Thr His Arg
      65           70           75           80
Glu Ser Asn Asp Leu Glu Leu Ala Ile Ala Ser Arg Tyr Thr Val Ser
      85           90           95
Glu Asp Phe Cys Ser Tyr Thr Phe Phe Ile Lys Asp Ser Ala Leu Trp
      100          105          110
Ser Asp Gly Thr Pro Ile Thr Ser Glu Asp Ile Arg Asn Ala Trp Glu
      115          120          125
Tyr Ala Gln Glu Asn Ser Pro His Ile Gln Ile Phe Gln Gly Leu Asn
      130          135          140

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Phe Ser Thr Pro S Ser Asn Ala Ile Thr Ile His L sp Ser Pro
 145 150 155 160
 Asn Pro Asp Phe Pro Lys Leu Leu Ala Phe Pro Ala Phe Ala Ile Phe
 165 170 175
 Lys Pro Glu Asn Pro Lys Leu Phe Ser Gly Pro Tyr Thr Leu Val Glu
 180 185 190
 Tyr Phe Pro Gly His Asn Ile His Leu Lys Lys Asn Pro Asn Tyr Tyr
 195 200 205
 Asp Tyr His Cys Val Ser Ile Asn Ser Ile Lys Leu Leu Ile Ile Pro
 210 215 220
 Asp Ile Tyr Thr Ala Ile His Leu Leu Asn Arg Gly Lys Val Asp Trp
 225 230 235 240
 Val Gly Gln Pro Trp His Gln Gly Ile Pro Trp Glu Leu His Lys Gln
 245 250 255
 Ser Gln Tyr His Tyr Tyr Thr Tyr Pro Val Glu Gly Ala Phe Trp Leu
 260 265 270
 Cys Leu Asn Thr Lys Ser Pro His Leu Asn Asp Leu Gln Asn Arg His
 275 280 285
 Arg Leu Ala Thr Cys Ile Asp Lys Arg Ser Ile Ile Glu Glu Ala Leu
 290 295 300
 Gln Gly Thr Gln Gln Pro Ala Glu Thr Leu Ser Arg Gly Ala Pro Gln
 305 310 315 320
 Pro Asn Gln Tyr Lys Lys Gln Lys Pro Leu Thr Pro Gln Glu Lys Leu
 325 330 335
 Val Leu Thr Tyr Pro Ser Asp Ile Leu Arg Cys Gln Arg Ile Ala Glu
 340 345 350
 Ile Leu Lys Glu Gln Trp Lys Ala Ala Gly Ile Asp Leu Ile Leu Glu
 355 360 365
 Gly Leu Glu Tyr His Leu Phe Val Asn Lys Arg Lys Val Gln Asp Tyr
 370 375 380
 Ala Ile Ala Thr Gln Thr Gly Val Ala Tyr Tyr Pro Gly Ala Asn Leu
 385 390 395 400
 Ile Ser Glu Glu Asp Lys Leu Leu Gln Asn Phe Glu Ile Ile Pro Ile
 405 410 415
 Tyr Tyr Leu Ser Tyr Asp Tyr Leu Thr Gln Asp Phe Ile Glu Gly Val
 420 425 430
 Ile Tyr Asn Ala Ser Gly Ala Val Asp Leu Lys Tyr Thr Tyr Phe Pro
 435 440 445

<210>217

<211>534

<212>PRT

<213>Chlamydia pneumoniae

<400>217

Gln Ile Glu Tyr Tyr Ile Met Lys Met His Arg Leu Lys Pro Thr Leu
 1 5 10 15
 Lys Ser Leu Ile Pro Asn Leu Leu Phe Leu Leu Leu Thr Leu Ser Ser
 20 25 30
 Cys Ser Lys Gln Lys Gln Glu Pro Leu Gly Lys His Leu Val Ile Ala
 35 40 45
 Met Ser His Asp Leu Ala Asp Leu Asp Pro Arg Asn Ala Tyr Leu Ser
 50 55 60
 Arg Asp Ala Ser Leu Ala Lys Ala Leu Tyr Glu Gly Leu Thr Arg Glu
 65 70 75 80
 Thr Asp Gln Gly Ile Ala Leu Ala Leu Ala Glu Ser Tyr Thr Leu Ser
 85 90 95
 Lys Asp His Lys Val Tyr Thr Phe Lys Leu Arg Pro Ser Val Trp Ser
 100 105 110
 Asp Gly Thr Pro Leu Thr Ala Tyr Asp Phe Glu Lys Ser Ile Lys Gln
 115 120 125
 Leu Tyr Phe Glu Glu Phe Ser Pro Ser Ile His Thr Leu Leu Gly Val
 130 135 140
 Ile Lys Asn Ser Ser Ala Ile His Asn Ala Gln Lys Ser Leu Glu Thr
 145 150 155 160
 Leu Gly Ile Gln Ala Lys Asp Asp Leu Thr Leu Val Ile Thr Leu Glu

165 170 175
 Gln Pro Phe Pro Tyr Phe Leu Thr Leu Ile Ala Arg Pro Val Phe Ser
 180 185 190
 Pro Val His His Thr Leu Arg Glu Ser Tyr Lys Lys Gly Thr Pro Pro
 195 200 205
 Ser Thr Tyr Ile Ser Asn Gly Pro Phe Val Leu Lys Lys His Xaa His
 210 215 220
 Gln Asn Tyr Leu Ile Leu Glu Lys Asn Pro His Tyr Tyr Asp His Glu
 225 230 235 240
 Ser Val Lys Leu Asp Arg Val Thr Leu Lys Ile Ile Pro Asp Ala Ser
 245 250 255
 Thr Ala Thr Lys Leu Phe Lys Ser Lys Ser Ile Asp Trp Ile Gly Ser
 260 265 270
 Pro Trp Ser Ala Pro Ile Ser Asn Glu Asp Gln Lys Val Leu Ser Gln
 275 280 285
 Glu Lys Ile Leu Thr Tyr Ser Val Ser Ser Thr Thr Leu Leu Ile Tyr
 290 295 300
 Asn Leu Gln Lys Pro Leu Ile Gln Asn Lys Ala Leu Arg Lys Ala Ile
 305 310 315 320
 Ala His Ala Ile Asp Arg Lys Ser Ile Leu Arg Leu Val Pro Ser Gly
 325 330 335
 Gln Glu Ala Val Thr Leu Val Pro Pro Asn Leu Ser Gln Leu Asn Leu
 340 345 350
 Gln Lys Glu Ile Ser Thr Glu Glu Arg Gln Thr Lys Ala Arg Ala Tyr
 355 360 365
 Phe Gln Glu Ala Lys Glu Thr Leu Ser Glu Lys Glu Leu Ala Glu Leu
 370 375 380
 Ser Ile Leu Tyr Pro Ile Asp Ser Ser Asn Ser Ser Ile Ile Ala Gln
 385 390 395 400
 Glu Ile Gln Arg Gln Leu Lys Asp Thr Leu Gly Leu Lys Ile Lys Ile
 405 410 415
 Gln Gly Met Glu Tyr His Cys Phe Leu Lys Lys Arg Arg Gln Gly Asp
 420 425 430
 Phe Phe Ile Ala Thr Gly Gly Trp Ile Ala Glu Tyr Val Ser Pro Val
 435 440 445
 Ala Phe Leu Ser Ile Leu Gly Asn Pro Arg Asp Leu Thr Gln Trp Arg
 450 455 460
 Asn Ser Asp Tyr Glu Lys Thr Leu Glu Lys Leu Tyr Leu Pro His Ala
 465 470 475 480
 Tyr Lys Glu Asn Leu Lys Arg Ala Glu Met Ile Ile Glu Glu Glu Thr
 485 490 495
 Pro Ile Ile Pro Leu Tyr His Gly Lys Tyr Ile Tyr Ala Ile His Pro
 500 505 510
 Lys Ile Gln Asn Thr Phe Gly Ser Leu Leu Gly His Thr Asp Leu Lys
 515 520 525
 Asn Ile Asp Ile Leu Ser
 530

<210>218

<211>296

<212>PRT

<213>Chlamydia pneumoniae

<400>218

Leu Ser Leu Val Phe Ser Tyr Ile Lys Asn Arg Ile Leu Phe Asn Leu
 1 5 10 15
 Leu Ser Leu Trp Ile Val Leu Thr Leu Thr Phe Leu Val Met Lys Thr
 20 25 30
 Ile Pro Gly Asp Pro Phe Asn Asp Glu Gly Cys Asn Val Leu Ser Glu
 35 40 45
 Glu Val Leu Gln Thr Leu Lys Ser Arg Tyr Gly Leu Asp Lys Pro Leu
 50 55 60
 Tyr Gln Gln Tyr Thr Gln Tyr Leu His Ser Ile Ala Lys Leu Asp Phe
 65 70 75 80
 Gly Asn Ser Leu Val Tyr Lys Asp Arg Lys Val Thr Asn Ile Ile Ser
 85 90 95

Thr Ala Phe Pro I er Ala Ile Leu Gly Leu Gln Ser Leu Phe Leu
 100 105 110
 Ser Ile Gly Gly Gly Ile Ala Leu Gly Thr Ile Ala Ala Leu Lys Lys
 115 120 125
 Lys Lys Gln Arg Arg Tyr Ile Leu Gly Ala Ser Ile Leu Gln Ile Ser
 130 135 140
 Ile Pro Ala Phe Ile Phe Ala Thr Leu Leu Gln Tyr Val Phe Ala Val
 145 150 155 160
 Lys Ile Pro Leu Leu Pro Ile Ala Cys Trp Gly Ser Phe Thr His Thr
 165 170 175
 Ile Leu Pro Thr Leu Ala Leu Ala Val Thr Pro Met Ala Phe Ile Ile
 180 185 190
 Gln Leu Thr Tyr Ser Ser Val Ser Ala Ala Leu Asn Lys Asp Tyr Val
 195 200 205
 Leu Leu Ala Tyr Ala Lys Gly Leu Ser Pro Leu Lys Val Val Ile Lys
 210 215 220
 His Ile Leu Pro Tyr Ala Ile Phe Pro Thr Ile Ser Tyr Ser Ala Phe
 225 230 235 240
 Leu Thr Thr Thr Val Ile Thr Gly Thr Phe Ala Ile Glu Asn Ile Phe
 245 250 255
 Cys Ile Pro Gly Leu Gly Lys Trp Phe Ile Cys Ser Ile Lys Gln Arg
 260 265 270
 Asp Tyr Pro Val Ala Leu Gly Leu Ser Val Phe Tyr Gly Thr Tyr Leu
 275 280 285
 Cys Ser Leu Leu Tyr Phe Leu Thr
 290 295

<210>219

<211>284

<212>PRT

<213>Chlamydia pneumoniae

<400>219

Met Asp Asn Tyr Leu Leu Asn Ile Lys Asp Leu Thr Ile Thr Ser Thr
 1 5 10 15
 Asn Pro Lys Arg Thr Leu Ile Glu Asn Leu Ser Leu Gln Leu Lys Glu
 20 25 30
 Asn Arg Asn Leu Ala Leu Val Gly Glu Ser Gly Ser Gly Lys Thr Thr
 35 40 45
 Ile Thr Lys Ala Ile Leu Gly Phe Leu Pro Glu Asn Cys Leu Ile Lys
 50 55 60
 Thr Gly Ser Ile Leu Phe Glu Asp Ile Asp Ile Thr Lys Leu Ser Pro
 65 70 75 80
 Lys Glu Leu His Lys Ile Arg Gly Gln Lys Ile Ala Thr Ile Leu Gln
 85 90 95
 Asn Ala Met Gly Ser Leu Thr Pro Ser Met Arg Ile Gly Met Gln Ile
 100 105 110
 Ile Glu Thr Leu Arg Gln His His Lys Met Asn Lys Glu Ala Tyr
 115 120 125
 Asn Lys Ala Met Gln Leu Leu Thr Asp Val Cys Ile Pro Asn Pro Lys
 130 135 140
 Tyr Ser Phe Ser Gln Tyr Pro Phe Glu Leu Ser Gly Gly Met Arg Gln
 145 150 155 160
 Arg Val Val Ile Ala Ile Ala Leu Ala Ser Gln Pro Lys Leu Ile Leu
 165 170 175
 Ala Asp Glu Pro Thr Thr Ala Leu Asp Ser Met Ser Gln Ala Gln Val
 180 185 190
 Leu Arg Ile Leu Arg Asn Ile Gln Gln Gln Lys Gln Ala Thr Ile Leu
 195 200 205
 Leu Val Thr His Asn Leu Ser Leu Val Lys Glu Leu Cys Asn Asp Ile
 210 215 220
 Cys Ile Ile Lys Asp Gly Lys Leu Ile Glu Thr Gly Thr Val Glu Glu
 225 230 235 240
 Ile Phe Leu Ser Pro Lys His Pro Tyr Thr Leu Lys Leu Leu Asn Ala
 245 250 255
 Val Ser Lys Ile Pro Ile Lys Lys Thr Ser Ser Pro Ile Leu Lys Asn

260 265
 Lys Phe Gln Pro Leu Met Ser Met Gln Gly Gly Leu
 275 280
 <210>220
 <211>293
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>220
 Val Pro Thr Ser Asn Glu Tyr Ala Arg Trp Phe Met Thr Thr Leu Leu
 1 5 10 15
 Ser Ile Lys Asp Leu Ser Leu Thr Ile Arg Gly Lys Lys Ile Leu Asn
 20 25 30
 His Ile Asn Leu Asn Leu Ile Lys Gly Ser Tyr Leu Thr Ile Val Gly
 35 40 45
 Pro Ser Gly Ser Gly Lys Ser Ser Leu Ala Leu Thr Ile Leu Asp Leu
 50 55 60
 Leu Lys Pro Thr Thr Gly Thr Ile Thr Phe His Met Asp Pro Lys Ile
 65 70 75 80
 Pro Arg Ala Arg Lys Val Gln Val Ile Trp Gln Asp Ile Asp Ser Ser
 85 90 95
 Leu Asn Pro Cys Met Ser Ile Lys Gly Ile Ile Ser Glu Pro Leu Asn
 100 105 110
 Ile Ile Gly Thr Tyr Ser Lys Ala Glu Gln Asn Lys Glu Ile Tyr Asn
 115 120 125
 Val Leu Asp Leu Val Asn Leu Pro Lys Ser Val Leu His Leu Lys Pro
 130 135 140
 Tyr Lys Leu Ser Gly Gly Gln Lys Gln Arg Ile Ala Ile Ala Lys Ala
 145 150 155 160
 Leu Val Ser Lys Pro Glu Leu Leu Ile Cys Asp Glu Pro Leu Ser Ser
 165 170 175
 Leu Asp Thr Leu Asn Gln Ser Leu Ile Leu Asp Leu Phe Gln Thr Ile
 180 185 190
 Lys Lys Glu Tyr Gln Asn Thr Leu Leu Phe Ile Thr His Asp Met Ser
 195 200 205
 Ala Ala Tyr Tyr Ile Ala Asp Thr Ile Ala Val Met Asp Gln Gly Ser
 210 215 220
 Leu Val Glu His Ala Cys Arg Glu Lys Ile Phe Ser Thr Pro Lys His
 225 230 235 240
 Thr Thr Thr Gln Asp Leu Leu Asp Ala Ile Pro Ile Phe Ser Leu Ile
 245 250 255
 Ser Thr Glu Met Glu Pro Ser Glu Glu Tyr Glu Leu Gln Val Ala Ser
 260 265 270
 Lys Xaa Ile Asp Leu Glu Ile Thr Asn Ser Tyr Arg Lys Ile Arg Ile
 275 280 285
 Phe Asp Val Ser Gln
 290
 <210>221
 <211>279
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>221
 Ile Val Pro Leu Pro Gln Lys Asn Asn Lys Glu Thr Ser Cys Met Asn
 1 5 10 15
 Thr Tyr Thr Phe Ser Pro Thr Leu Gln Lys Ser Phe Ser Leu Phe Leu
 20 25 30
 Leu Glu Lys Leu Asp Ser Tyr Phe Phe Gly Gly Thr Arg Thr Gln
 35 40 45
 Ile Leu Val Ile Thr Pro Thr Asn Ile Arg Leu Ala Ala Lys Lys Arg
 50 55 60
 Gly Cys Lys Val Ser Thr Ile Glu Lys Ile Ile Lys Ile Leu Ser Phe
 65 70 75 80
 Ile Leu Leu Pro Leu Val Ile Ile Ala Phe Ile Leu Arg Tyr Phe Leu
 85 90 95
 His Lys Lys Phe Asp Lys Gln Phe Leu Cys Ile Pro Lys Val Ile Ser

100 105 110
 Asn Glu Asp Glu Ala Leu Leu Gly Ser Arg Pro Gln Ala Val Glu Lys
 115 120 125
 Ala Val Arg Glu Ile Ser Pro Ala Phe Phe Ser Ile Pro Arg Lys Tyr
 130 135 140
 Gln Leu Ile Arg Ile Asp Thr Pro Lys Asp Asp Ala Pro Ser Ile Leu
 145 150 155 160
 Phe Pro Ile Gly Ile Glu Ile Ile Leu Lys Asp Leu Cys Ile Asp Thr
 165 170 175
 Leu Lys Gln Ser Asn Leu Phe Leu Lys Arg Glu Met Asp Phe Leu Gly
 180 185 190
 His Pro Glu Glu Lys Ala Leu Phe Asp Ser Ile Cys Ser Ile Glu Lys
 195 200 205
 Asp Gln Glu Trp Met Ser Leu Glu Ser Lys Lys Leu Leu Ile Thr His
 210 215 220
 Phe Leu Lys Tyr Leu Phe Val Ser Gly Ile Glu Gln Leu Asn Pro Gly
 225 230 235 240
 Phe Asn Pro Glu Asn Gly Arg Gly Tyr Phe Ser Glu Ile Ser Thr Ala
 245 250 255
 Lys Ile His Phe His Gln His Gly Arg Tyr Gly Pro Ile Arg Ser Ser
 260 265 270
 Gly Pro Ile Met Lys Glu Ile
 275

<210>222

<211>272

<212>PRT

<213>Chlamydia pneumoniae

<400>222

Ile Val Asp Arg Arg Ser Pro Ala Cys Tyr Asp Ser Ile Asn Ser Asp
 1 5 10 15
 Ala Ile Gly Val Ser Leu Leu Met Asp Ile Ser His Ile Leu Glu Asp
 20 25 30
 Leu Ala Tyr Asp Glu Gly Ile Leu Pro Arg Glu Ala Ile Glu Ala Ala
 35 40 45
 Ile Val Lys Gln Met Gln Ile Thr Pro Tyr Leu Leu His Ile Leu His
 50 55 60
 Asp Ala Thr Gln Arg Val Pro Glu Ile Val Asn Asp Gly Ser Tyr Gln
 65 70 75 80
 Gly His Leu Tyr Ala Met Tyr Leu Leu Ala Gln Phe Arg Glu Ser Arg
 85 90 95
 Ala Leu Pro Leu Ile Ile Lys Leu Phe Ala Phe Glu Asp Asp Thr Pro
 100 105 110
 His Ala Ile Ala Gly Asp Val Leu Thr Glu Asp Leu Pro Arg Ile Leu
 115 120 125
 Ala Ser Val Cys Asn Asp Asp Ser Leu Ile Lys Glu Leu Ile Glu Thr
 130 135 140
 Pro Lys Ile Asn Pro Tyr Val Lys Ala Ala Ala Ile Ser Gly Leu Val
 145 150 155 160
 Thr Leu Val Gly Ala Gly Lys Ile Pro Arg Asp Lys Val Ile Arg Xaa
 165 170 175
 Phe Ala Glu Leu Leu Asn Tyr Arg Leu Glu Lys Gln Pro Ser Phe Ala
 180 185 190
 Trp Asp Asn Leu Ile Ala Gly Ile Cys Thr Leu Tyr Pro Gly Glu Leu
 195 200 205
 Phe Tyr Pro Ile Ser Lys Ala Phe Asp Gly Gly Leu Val Asp Thr Ser
 210 215 220
 Phe Ile Ser Met Glu Asp Val Glu Asn Ile Ile His Glu Glu Thr Val
 225 230 235 240
 Glu Ser Cys Ile His Thr Leu Cys Ser Ser Thr Glu Leu Ile Asn Asp
 245 250 255
 Thr Leu Glu Glu Met Glu Lys Trp Leu Glu Asp Phe Pro Ile Glu Pro
 260 265 270

<210>223

<211>246

<212>PRT

<213>Chlamydia pneumoniae

<400>223

Val Asn Lys Lys Lys Arg Phe Leu Ser Leu Leu Phe Leu Thr Ala Val
 1 5 10 15
 Leu Leu Gly Ile Trp Phe Ser Pro His Pro Ala Ser Ile Asn Ser Asn
 20 25 30
 Ala Trp Gln Leu Phe Ala Ile Phe Thr Thr Thr Ile Met Gly Ile Ile
 35 40 45
 Phe Gln Pro Val Pro Met Gly Ala Ile Ala Ile Ile Gly Ile Ser Thr
 50 55 60
 Leu Leu Leu Thr Gln Thr Leu Thr Leu Glu Gln Gly Leu Ser Gly Phe
 65 70 75 80
 His Asn Pro Ile Ala Trp Leu Val Phe Leu Ser Phe Ser Ile Ala Lys
 85 90 95
 Gly Ile Ile Lys Thr Gly Leu Gly Glu Arg Ile Ala Tyr Phe Phe Val
 100 105 110
 Ser Ala Leu Gly Lys Ser Pro Leu Gly Leu Ser Tyr Gly Leu Val Ile
 115 120 125
 Thr Asp Phe Phe Leu Ala Pro Ala Ile Pro Ser Val Thr Ala Arg Ala
 130 135 140
 Gly Gly Ile Leu Tyr Pro Val Val Thr Ser Leu Ser Asp Ser Phe Gly
 145 150 155 160
 Ser Ser Ala Glu Lys Gly Thr Gln Asp Leu Ile Gly Ser Phe Leu Ile
 165 170 175
 Lys Val Ala Tyr Gln Ser Ser Val Ile Thr Ser Ala Met Phe Leu Thr
 180 185 190
 Ala Met Ala Gly Asn Pro Leu Val Ala Ala Leu Ala Gly His Val Gly
 195 200 205
 Val Ser Leu Ser Trp Val Leu Trp Ala Lys Ala Ala Ile Ile Pro Gly
 210 215 220
 Leu Leu Ser Leu Phe Leu Met Pro Ile Ile Leu Tyr Lys Leu Tyr Pro
 225 230 235 240
 Pro Lys Asn His Ile Leu
 245

<210>224

<211>123

<212>PRT

<213>Chlamydia pneumoniae

<400>224

Leu Ser Pro Arg Gly Leu Phe Pro Lys Ala Leu Thr Lys Lys Tyr Ala
 1 5 10 15
 Ile Arg Ser Pro Ser Pro Val Phe Met Ile Pro Phe Ala Ile Glu Lys
 20 25 30
 Glu Arg Lys Thr Asn His Ala Ile Gly Leu Trp Asn Pro Asp Asn Pro
 35 40 45
 Cys Ser Arg Val Asn Val Cys Val Ser Ser Ser Val Glu Ile Pro Ile
 50 55 60
 Met Ala Ile Ala Pro Met Gly Thr Gly Trp Lys Met Ile Pro Met Ile
 65 70 75 80
 Val Val Val Asn Ile Ala Lys Ser Cys Gln Ala Leu Glu Phe Ile Asp
 85 90 95
 Ala Gly Trp Gly Glu Asn Gln Met Pro Lys Ser Thr Ala Val Arg Lys
 100 105 110
 Arg Arg Asp Lys Lys Arg Phe Phe Leu Phe Thr
 115 120

<210>225

<211>550

<212>PRT

<213>Chlamydia pneumoniae

<400>225

Met His Pro Leu Tyr Val Asp Leu Asp Thr Ile Ile Ser Ser Tyr Ser
 1 5 10 15
 Pro Pro Leu Pro Lys Glu Phe Gln Glu Ala Ala Ser Leu Ile Ala Val

488

530 535 540
 Ile Pro Asp Thr Thr Tyr
 545 550
 <210>226
 <211>322
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>226
 Tyr Gln Lys Leu Trp Glu Arg Glu Arg Glu Tyr Phe Lys Thr Ile Arg
 1 5 10 15
 Glu Lys Glu His Ala Thr Ile Ser Thr Met Leu Val Glu Leu Glu Ala
 20 25 30
 Leu Lys Arg Glu Phe Ala His Leu Lys Asp Gln Lys Pro Thr Ser Asp
 35 40 45
 Gln Glu Ile Thr Ser Leu Tyr Gln Cys Leu Asp His Leu Glu Phe Val
 50 55 60
 Leu Leu Gly Leu Gly Gln Asp Lys Phe Leu Lys Ala Thr Glu Asp Glu
 65 70 75 80
 Asp Val Leu Phe Glu Ser Gln Lys Ala Ile Asp Ala Trp Asn Ala Leu
 85 90 95
 Leu Thr Lys Ala Arg Asp Val Leu Gly Leu Gly Asp Ile Gly Ala Ile
 100 105 110
 Tyr Gln Thr Ile Glu Phe Leu Gly Ala Tyr Leu Ser Lys Val Asn Arg
 115 120 125
 Arg Ala Phe Cys Ile Ala Ser Glu Ile His Phe Leu Lys Thr Ala Ile
 130 135 140
 Arg Asp Leu Asn Ala Tyr Tyr Leu Leu Asp Phe Arg Trp Pro Leu Cys
 145 150 155 160
 Lys Ile Glu Glu Phe Val Asp Trp Gly Asn Asp Cys Val Glu Ile Ala
 165 170 175
 Lys Arg Lys Leu Cys Thr Phe Glu Lys Glu Thr Lys Glu Leu Asn Glu
 180 185 190
 Ser Leu Leu Arg Glu Glu His Ala Met Glu Lys Cys Ser Ile Gln Asp
 195 200 205
 Leu Gln Arg Lys Leu Ser Asp Ile Ile Ile Glu Leu His Asp Val Ser
 210 215 220
 Leu Phe Cys Phe Ser Lys Thr Pro Ser Gln Glu Tyr Gln Lys Asp
 225 230 235 240
 Cys Leu Tyr Gln Ser Arg Leu Arg Tyr Leu Leu Leu Tyr Glu Tyr
 245 250 255
 Thr Leu Leu Cys Lys Thr Ser Thr Asp Phe Gln Glu Gln Ala Arg Ala
 260 265 270
 Lys Glu Glu Phe Ile Arg Glu Lys Phe Ser Leu Leu Glu Leu Glu Lys
 275 280 285
 Gly Ile Lys Gln Thr Lys Glu Leu Glu Phe Ala Ile Ala Lys Ser Lys
 290 295 300
 Leu Glu Arg Gly Cys Leu Val Met Arg Lys Tyr Glu Xaa Pro Leu Asn
 305 310 315 320
 Ile Val

<210>227
 <211>101
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>227
 Glu Cys Val Met Ser Tyr Pro Asp Ile Ser Asn Val Gln Ala Ser Ser
 1 5 10 15
 Ile Gln Ser Ala Leu Leu His Lys Thr Ser Asp Gln Ile Gln Gln Lys
 20 25 30
 Arg Cys Phe Lys Gln Ser Thr Phe Val Ile Leu Ala Val Ser Leu Val
 35 40 45
 Ile Ile Gly Ser Leu Phe Leu Leu Ala Gly Val Ala Ile Leu Thr Val
 50 55 60
 Phe Ser His Gly Val Leu Ser Leu Val Phe Gly Val Leu Gly Ile Val

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      65              70              75              80
Leu Gly Leu Leu Leu Leu Ala Gly Gly Val Gly Leu Leu Val Glu Glu
      85              90              95
Ala Lys Ser Leu Leu
      100

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<210>228

<211>398

<212>PRT

<213>Chlamydia pneumoniae

<400>228

Glu 1	Leu	Ser	Tyr	Gly 5	Val	Val	Val	Ser	Ile 10	Tyr	Ser	Glu	Ile	Leu 15	Ser
Phe	Ser	Glu	Leu	Thr	Ser	Cys	Lys	His	Ser	Leu	Phe	Pro	Phe	Gly	Pro
			20					25					30		
Ile	Glu	Thr	Ala	Ser	Ile	Arg	Ile	His	His	Val	Phe	Asn	Val	Val	Ile
			35				40					45			
Val	Cys	Leu	Ile	Ile	Leu	Gly	Thr	Leu	Phe	Val	Cys	Leu	Gly	Met	Val
	50					55					60				
Phe	Leu	Gly	Val	Phe	Ser	Thr	Tyr	Leu	Leu	Gly	Met	Ser	Ser	Met	Ile
65					70					75					80
Leu	Gly	Leu	Leu	Leu	Ile	Ser	Ile	Gly	Leu	Ala	Leu	Leu	Lys	Phe	Lys
				85					90					95	
Glu	Arg	Tyr	Gly	Leu	Glu	Pro	Lys	Glu	Leu	Phe	Gly	Val	Glu	Gly	Gly
			100					105					110		
Phe	Asp	Lys	Lys	Leu	Pro	Ser	Glu	Ile	Ile	Gln	Met	Gln	Asp	Gln	Ile
		115					120					125			
Ala	Asp	Leu	Ala	Arg	Glu	Leu	Asp	Leu	Glu	Gln	Lys	Lys	Asp	Thr	Leu
	130					135					140				
Ile	Arg	Gly	Phe	Ser	Ala	Arg	Leu	Asp	Val	Leu	Glu	Gly	Ser	Lys	Thr
145					150					155					160
Glu	Lys	Lys	Gln	Ile	Leu	Lys	Ile	Gly	Val	Pro	Arg	Asn	Leu	Ser	Glu
			165						170					175	
Ile	Gln	Glu	Arg	Ala	Gln	Glu	Gln	Asn	Ser	Ile	Leu	Glu	Gln	Cys	Lys
			180					185					190		
Glu	Ala	Leu	Leu	Phe	Arg	Arg	Lys	Ser	Ala	Gln	Glu	Ile	Phe	Lys	Lys
		195					200					205			
Leu	Tyr	Asp	Arg	Lys	Ala	Ala	Phe	Trp	Arg	Ser	Tyr	Arg	Glu	Asp	Leu
	210					215					220				
Trp	Cys	Tyr	Ser	Glu	Ile	His	Val	Ser	Lys	Lys	Ala	Leu	Ser	Asn	Leu
225					230					235					240
Tyr	Ile	Gly	Asp	Val	Phe	Glu	Gly	Thr	Ala	Pro	His	Phe	Leu	Met	Glu
			245						250					255	
Ala	Tyr	Ala	Met	Cys	Arg	Thr	Ala	Lys	Asn	Leu	Arg	Asn	Tyr	Val	Lys
			260					265					270		
Val	Cys	Val	Glu	Asp	Met	Arg	Val	Asn	Glu	Glu	Lys	Lys	Arg	Ala	Lys
		275					280					285			
Gln	Leu	Ser	Val	Ser	Glu	Leu	Leu	Cys	Cys	Cys	Thr	Glu	Ile	Glu	Thr
	290					295					300				
Asp	Leu	Glu	Asn	Glu	Thr	Asn	Leu	Phe	Thr	Ser	Asp	Ser	Glu	Asp	Val
305					310					315					320
Leu	Glu	Glu	Tyr	Gln	Ile	His	Cys	Ile	Arg	Val	Thr	Met	Leu	His	Ala
			325						330					335	
Leu	Trp	Ala	Ile	Tyr	Asn	Asp	Glu	Val	Val	Ser	Arg	Lys	Pro	Ile	Asp
			340					345					350		
Thr	Leu	Asp	Arg	Val	Arg	Ala	Arg	Met	Ala	Val	Glu	Asp	Cys	Ile	Glu

<210>229

<211>413

<212>PRT

<213>Chlamydia pneumoniae

<400>229

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Arg Met Tyr Phe Ser His Val Ser Thr Val Val Val Val Ala Leu Phe
 1          5          10          15
Ile Leu Gly Ile Phe Phe Leu Ser Gly Ser Leu Ala Phe Leu Val His
          20          25          30
Thr Ser Cys Gly Val Leu Leu Gly Ala Ala Leu Pro Ile Leu Cys Ile
          35          40          45
Gly Leu Val Leu Leu Ala Val Ala Leu Ile Val Phe Leu Cys His Lys
          50          55          60
His Lys Thr Arg Gln Asp Leu Asp Tyr Tyr Asp Gln Asp Leu Asp Ser
          65          70          75          80
Leu Val Ile His Lys Lys Glu Ile Pro Asn Asp Ile Ser Glu Leu Arg
          85          90          95
Val Thr Phe Glu Lys Leu Gln Asn Leu Phe Gln Phe His Thr Lys Asp
          100          105          110
Phe Ser Asp Leu Ser Gln Glu Leu Gln Gly Lys Phe Ile Asn Cys Met
          115          120          125
Glu Lys Trp Leu Thr Leu Glu Asp Glu Val Thr Lys Phe Leu Ile Val
          130          135          140
Arg Asp Arg Phe Leu Glu Thr Arg Arg Asn Phe Thr Thr Phe Gly Glu
          145          150          155          160
Gln Val Lys Gly Ile Gln Ser Asn Ile Phe Asp Leu His Glu Glu Lys
          165          170          175
Ser Ser Leu Tyr Leu Glu Leu Tyr Arg Leu Arg Lys Asp Leu Gln Val
          180          185          190
Leu Leu Asn Phe Phe Leu Leu Pro Pro Gly Ile Leu Lys Val Asp Tyr
          195          200          205
Asp Glu Ile Glu Ala Ile Lys Gly Leu Phe Ile Arg Leu Thr Ser Arg
          210          215          220
Leu Asp Lys Leu Asp Val Lys Ala Gln Glu Arg Lys Lys Phe Ile Asn
          225          230          235          240
Glu Met Ser Arg Glu Phe Lys Glu Val Glu Lys Ala Phe Asp Ile Val
          245          250          255
Asp Arg Ala Thr Lys Lys Leu Met Asp Arg Ala Lys Lys Glu Ser Pro
          260          265          270
Ala Arg Leu Phe Met Gly Arg Thr Glu Ser Leu Leu Glu Met Lys Lys
          275          280          285
Asn Glu Glu Ala Leu Lys Asn Gln Gly Leu Asp Pro Glu Asn Leu Ser
          290          295          300
His Pro Glu Leu Phe Ser Pro Tyr Gln Gln Leu Leu Ile Leu Asn Tyr
          305          310          315          320
Leu Asn Ser Glu Ile Val Leu His His Tyr Glu Phe Leu Ile Ser Gly
          325          330          335
Thr Val Thr Ser Gly Leu Thr Leu Glu Glu Cys Glu Asn Arg Met Arg
          340          345          350
Ala Ala Ser Thr Gly Leu Asn Ala Leu Leu Val Arg Lys Leu Gln Phe
          355          360          365
Arg Gly Ala Ile Lys Ser Ala Tyr Phe Glu Lys Leu Thr Glu Ile Glu
          370          375          380
Lys Glu Leu Arg Ser Leu Gln Asp Val Ile Xaa Ser Leu Glu Leu Glu
          385          390          395          400
Leu Ile His Lys Ile Lys Asp Ile Val Thr Glu Glu Thr
          405          410

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<210>230

<211>193

<212>PRT


<213>Chlamydia pneumoniae

<400>230

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Ile Cys Phe Lys Arg Arg Lys Asp Arg Thr Gly Met Leu Ser Arg Gln
 1          5          10          15
Lys Glu Ser Arg Glu Thr Gly Gly Val Ser Arg Ser Tyr Arg Arg Glu
          20          25          30
Leu Leu Glu Val Leu Lys Thr Arg Leu Ser Val Glu Lys Glu Ile Gln
          35          40          45

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Leu Phe Glu Glu Val  Ser Ala Phe Glu Glu Lys Le a Ser Leu
 50 55 60
 His Arg Thr Val Phe Ser Glu Glu Glu Leu Gln Glu Ala Leu Asp Lys
 65 70 75 80
 Ala Lys Ala Glu Leu Leu Asp Ile Gln Val Arg Lys Ser Val Val Glu
 85 90 95
 Asp Leu Ser Cys Glu Pro Thr Leu Ile Gln Tyr His Leu Leu Arg Leu
 100 105 110
 Tyr Glu Val Gln Cys Arg Ile Val Glu Gln Phe Leu Thr Gln Thr Phe
 115 120 125
 Ser Ser Glu Gln Glu Lys Val Leu Glu Glu Tyr Glu Ala Leu Lys Ala
 130 135 140
 Arg Ile Arg Lys Thr Leu Arg Val Lys Leu Asp Gln Val Arg Ala Asn
 145 150 155 160
 Val Ala Phe Val Ala Ser Thr Thr Asp Leu Leu Ser Glu Ser Glu Ser
 165 170 175
 Leu Asp Gly Asn Asp Ser Val Phe Glu Asp Ala His Asp Asp Phe Leu
 180 185 190
 Asp

<210>231

<211>267

<212>PRT

<213>Chlamydia pneumoniae

<400>231

Leu Thr Ser Ser Lys Lys Gln Val Met Ser Ser Ala Ile Ala Arg Asp
 1 5 10 15
 Cys Phe Pro Ser Pro Ser Pro Gln Pro Ser Ser Thr Leu Gly Val His
 20 25 30
 Pro Pro Lys Tyr Lys Ser Leu Ile Leu Ser Val Ser Leu Ile Val Leu
 35 40 45
 Gly Val Leu Leu Leu Cys Val Gly Met Leu Leu Leu Val Asn Ala Ile
 50 55 60
 Phe Ser Phe Ser Val Leu Thr Val Gly Leu Gly Gly Ala Gly Val Phe
 65 70 75 80
 Leu Gly Ser Leu Leu Leu Ile Leu Gly Leu Ile Phe Phe Val Ser Tyr
 85 90 95
 His Arg Lys Leu Ser Glu Ala Thr Arg Ser Leu Glu Gln Lys Ile Thr
 100 105 110
 Leu Glu Tyr Gln Pro Trp Ala Asp Leu Arg Lys Glu Leu Asn Glu Val
 115 120 125
 Gln Glu Trp Ser Asn Phe Leu Leu Asp Glu Trp Glu Asp Phe Lys Glu
 130 135 140
 Val Val Ala Gln His Lys Ser Gln Phe Ala Thr Phe Glu Gly Asp Leu
 145 150 155 160
 Leu Leu Phe Gly Arg Glu Val Glu Lys Tyr Glu Thr Ile Trp Lys Glu
 165 170 175
 Leu Asp Gly Arg Asp Val Ala Leu Leu Thr Glu Leu Lys Asn Ile Trp
 180 185 190
 Gly Pro Leu Glu Phe Leu Arg Lys Lys Gly Asp Arg Leu Gln Cys Glu
 195 200 205
 Ile Asp Lys Leu Arg Lys Glu Val Met Lys Val Gly Lys Ser Gly Leu
 210 215 220
 Lys Leu Ala Cys Glu Leu Thr Lys Phe Lys Ser Ala Leu Lys Asp Val
 225 230 235 240
 Lys Ile Glu Gln Glu Cys Tyr Arg Asp Lys Arg Lys Val Glu Lys Leu
 245 250 255
 Glu Val Phe Pro Glu Val Ile Gly Gly Asn Tyr
 260 265

<210>232

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>232

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Asn Lys Ala Arg Thr      Asn Pro Val Thr Phe Asp Arg Ile Gln Val
 1          5          10          15
Asp Phe Ile Pro Glu Asp Thr Ser Leu Arg Ile Asn Ser Tyr Ile Val
          20          25          30
Ala Gly Gly Leu Leu Ile Leu Gly Val Val Leu Ser Ile Leu Ser Val
          35          40          45
Ile Cys Leu Asp Ile Gly Leu Val Gly Leu Ser Ala Gly Ala Ala Phe
          50          55          60
Thr Leu Gly Leu Gly Cys Leu Ile Phe Ala Leu Phe Leu Phe Ser Phe
          65          70          75          80
Ser Leu Ile Leu Leu Ser Gln Glu Lys Arg Val Pro Asp Val Leu
          85          90          95
Ser Leu Tyr Leu Glu Lys Glu Val Pro Gln Tyr Glu Thr Pro Leu Tyr
          100          105          110
Lys Glu Asp Leu Glu Ser Glu Arg Asp Met Ser Ala Ile Ser Glu Arg
          115          120          125
Leu Gly Ile Ile Glu Glu Lys Leu Arg Ile Ala Glu Lys Phe Arg Tyr
          130          135          140
Ser Asp Ser Val Phe Val
          145          150

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<210>233

<211>375

<212>PRT

<213>Chlamydia pneumoniae

<400>233

```

Gly Ser Ser Leu Ala Leu Lys Phe His Leu Ile His Gln Ser Lys Lys
 1          5          10          15
Ser Gln Ala Arg Val Gly Gln Ile Glu Thr Ser His Gly Val Ile Asp
          20          25          30
Thr Pro Ala Phe Val Pro Val Ala Thr His Gly Ala Leu Lys Gly Val
          35          40          45
Ile Asp His Ser Asp Ile Pro Leu Leu Phe Cys Asn Thr Tyr His Leu
          50          55          60
Leu Leu His Pro Gly Pro Glu Ala Val Ala Lys Leu Gly Gly Leu His
          65          70          75          80
Gln Phe Met Gly Arg Gln Ala Pro Ile Ile Thr Asp Ser Gly Gly Phe
          85          90          95
Gln Ile Phe Ser Leu Ala Tyr Gly Ser Val Ala Glu Glu Ile Lys Ser
          100          105          110
Cys Gly Lys Lys Lys Gly Met Ser Ser Leu Val Lys Ile Thr Asp Glu
          115          120          125
Gly Ala Trp Phe Lys Ser Tyr Arg Asp Gly Arg Lys Leu Phe Leu Ser
          130          135          140
Pro Glu Leu Ser Val Gln Ala Gln Lys Asp Leu Gly Ala Asp Ile Ile
          145          150          155          160
Ile Pro Leu Asp Glu Leu Leu Pro Phe His Thr Asp Gln Glu Tyr Phe
          165          170          175
Leu Thr Ser Cys Ser Arg Thr Tyr Val Trp Glu Lys Arg Ser Leu Glu
          180          185          190
Tyr His Arg Lys Asp Pro Arg His Gln Ser Met Tyr Gly Val Ile His
          195          200          205
Gly Gly Leu Asp Pro Glu Gln Arg Arg Ile Gly Val Arg Phe Val Glu
          210          215          220
Asp Glu Pro Phe Asp Gly Ser Ala Ile Gly Gly Ser Leu Gly Arg Asn
          225          230          235          240
Leu Gln Glu Met Ser Glu Val Val Lys Ile Thr Thr Ser Phe Leu Ser
          245          250          255
Lys Glu Arg Pro Val His Leu Leu Gly Ile Gly Asp Leu Pro Ser Ile
          260          265          270
Tyr Ala Met Val Gly Phe Gly Ile Asp Ser Phe Asp Ser Ser Tyr Pro
          275          280          285
Thr Lys Ala Ala Arg His Gly Leu Ile Leu Ser Lys Ala Gly Pro Ile
          290          295          300
Lys Ile Gly Gln Gln Lys Tyr Ser Gln Asp Ser Ser Thr Ile Asp Pro

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<210>234
<211>123
<212>PRT
<213>Chlamydia pneumoniae
<400>234
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<210>235
<211>128
<212>PRT
<213>Chlamydia pneumoniae
<400>235
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<210>236
<211>91
<212>PRT
<213>Chlamydia pneumoniae
<400>236
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494

Ile Leu Gly Asn Ile Gly Ala Gly Arg Leu Tyr Ser Trp Tyr
 65 75 80
 Thr Ser Asp Glu Asp Trp Lys Lys Gln Val Val
 85 90

<210>237

<211>100

<212>PRT

<213>Chlamydia pneumoniae

<400>237

Arg Gly Met Leu Pro Ala Trp Val Thr Pro Gly Phe Leu Thr Lys Leu
 1 5 10 15
 Ala Glu Gly Leu Lys Ile Asn Ser Gly Arg Ser Val Asn Pro Lys Gly
 20 25 30
 Leu Glu Gln Cys Ile Ala Ser Gly Gln Tyr Asn Glu Gln Ile Lys Lys
 35 40 45
 Asn Asn Leu Tyr Gly Ser Gln Val Leu Gly Gly Gln Leu Ala Thr Pro
 50 55 60
 Thr Ala Val Val Gly Asp Tyr Leu Ile Glu Asp Pro Thr Phe His Glu
 65 70 75 80
 Ile Glu Arg Ala Ile Gln His Ile Arg Gln Leu Gln Ala Val Glu Gly
 85 90 95
 Asp His Asp Asp
 100

<210>238

<211>140

<212>PRT

<213>Chlamydia pneumoniae

<400>238

Gln Ile Leu Phe Thr Ser Pro Leu Asn Lys Lys Xaa Leu Val Leu Cys
 1 5 10 15
 Thr Ala Met Phe Phe Ile Val Cys Phe Gly Phe Leu Ile His Lys Lys
 20 25 30
 His Thr Ile Leu Pro Pro Lys Ala His Ile Pro Thr Asn Ala Lys His
 35 40 45
 Phe Pro Thr Ile Gly Asn Pro Tyr Ala Pro Ile Asn Ile Thr Val Phe
 50 55 60
 Glu Glu Pro Ser Cys Ser Ala Cys Ala Glu Phe Thr Thr Glu Val Phe
 65 70 75 80
 Pro Leu Leu Lys Lys His Tyr Ile Asp Thr Gly Glu Ile Ser Phe Thr
 85 90 95
 Leu Ile Pro Val Cys Phe Ile Arg Gly Ser Lys Pro Ala Ala Gln Ala
 100 105 110
 Leu Leu Cys Ile Tyr His His Asp Ser Thr Ser Gly Arg Tyr Arg Arg
 115 120 125
 Leu Tyr Gly Ile Phe Pro Ser Tyr Phe Asp Leu Ser
 130 135 140

<210>239

<211>154

<212>PRT

<213>Chlamydia pneumoniae

<400>239

Leu Phe Thr Tyr Phe Leu Ser Tyr Cys Phe Pro Asn Gln Thr Phe Ser
 1 5 10 15
 Ser Leu Val Arg Ser Pro Thr Arg His Leu Gly Tyr Pro Phe Arg Leu
 20 25 30
 Arg Cys Arg Arg Ser Pro Thr Ile Phe Ala Asn Asp Thr Leu Ile Gly
 35 40 45
 Phe Ala Ile Leu Ala Val Val Cys Ile Ser Pro Thr Arg Pro Glu Ala
 50 55 60
 Leu Glu Val Gly Pro Thr Leu Pro Glu Gly Phe Ser Tyr Asn Pro Ser
 65 70 75 80
 Ala Gly Gly Arg Arg Ala Ala Val Leu Phe Leu Ser Leu Leu Gly Trp
 85 90 95
 Leu Glu Ala Arg Tyr Leu Thr Ala Ser Ser Leu Gly Ile Thr Ser Ser

100 105 110
 Gln Ser Ser Asn Phe Leu Leu Leu Tyr Ser Ser Ile Met Thr Val Tyr
 115 120 125
 Ser Leu Leu Val Val Leu Ser Leu Ala Gly Ser Glu Arg Arg Trp His
 130 135 140
 Thr Arg Pro Lys Ile Val Ile Ala Thr Ala
 145 150
 <210>240
 <211>94
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>240
 Leu Leu Ala Met Leu Cys Leu Thr Ile Glu Pro Ala Leu Ala Val Val
 1 5 10 15
 Phe Ala Tyr Asp Glu Thr Arg Ala Thr Leu Arg Tyr Ile Ser Gln Phe
 20 25 30
 Leu Gly Asp Lys Arg Ala Leu Thr Arg Ala Ser Phe Phe Gly Ser Glu
 35 40 45
 Tyr Tyr Lys His Thr Leu Ser Trp Glu Glu Arg Thr Val Arg Pro Leu
 50 55 60
 Arg Lys Ala Tyr Lys Gln Ala Phe Glu Gly Ile Ser Phe Pro Ile Asn
 65 70 75 80
 Gln Leu Leu Ala Ile Leu Val Ala Ser Phe Cys Lys Ser Gln
 85 90
 <210>241
 <211>234
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>241
 Arg Phe Lys Lys Ala Leu Ile Tyr Met Ser Ser Gln Pro Leu Val Thr
 1 5 10 15
 Thr Ser Ser Ser Leu Ser Arg Tyr Val Val Leu Thr Gly Glu Glu Lys
 20 25 30
 Val Ala Cys Tyr Lys Lys Ala Phe Asn His Ile Trp His Gly Ala Pro
 35 40 45
 Ala Ile Ile Leu Ala Ala Ala Leu Leu Met Phe Cys Ile Phe Gly Phe
 50 55 60
 Val Leu Gly Ser Ile Leu Leu Gly Ala Pro Leu Glu Gly Ala Ser Ile
 65 70 75 80
 Leu Tyr Asp Val Ile Leu Pro Trp Leu Leu Pro Ser Ile Leu Val Phe
 85 90 95
 Val Leu Leu Val Leu Pro Leu Asn Ile Tyr Ala Tyr Ser His His Lys
 100 105 110
 Gln Val Leu Ala Leu His Glu Arg Ile Thr Gln Ser Asn Tyr Lys Glu
 115 120 125
 Ile Tyr Asp His Cys Glu Lys Glu Lys Lys Thr Pro Asn Lys Lys Ala
 130 135 140
 Leu Ser Leu Tyr Ile Glu Ser Gln Val Leu Val Pro Glu Tyr Ser Lys
 145 150 155 160
 Arg Phe Ser Ser Met Ile Leu Gly Lys Thr Leu Lys Ile Ile Pro Lys
 165 170 175
 Lys Asp Ser Pro Glu Ser Leu Lys His Asp Glu Leu Ile Gln Lys Ala
 180 185 190
 Leu Glu Arg Ala Lys Glu Asn Ile Tyr Met Asn Lys Asn Gln Arg Glu
 195 200 205
 Lys Arg Asp Glu Arg Glu Ala Lys Lys Glu Ala Lys Asn Ala Ser Lys
 210 215 220
 Thr Asn Pro Leu Trp Glu Gly Leu Gly Thr
 225 230
 <210>242
 <211>235
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>242

Met Leu Gln Ala His Leu Cys Tyr Ser Cys Asp Asn Val Ile
 1 5 10 15
 Leu Lys Asp Ala Ser Phe Gln Ala Ser Pro Gly Thr Ile Thr Ile Ile
 20 25 30
 Leu Gly Ser Ser Gly Val Gly Lys Thr Thr Leu Phe Arg Leu Leu Ala
 35 40 45
 Gly Phe Leu Pro Leu Gln Glu Gly Glu Leu Leu Trp Asn Gly Ser Pro
 50 55 60
 Leu Asn Arg Lys Asp Val Ala Tyr Met Gln Gln Lys Glu Ala Leu Leu
 65 70 75 80
 Pro Trp Arg Thr Ala Leu Lys Asn Met Thr Leu Ser Thr Glu Leu Gly
 85 90 95
 Ile Asn Thr Ser His Asn Ala Leu Ser Asn Glu Arg Leu Glu Glu Ile
 100 105 110
 Ile His Asn Phe Asp Leu Gly Gln Leu Leu Asp Arg Tyr Pro Asp Glu
 115 120 125
 Leu Ser Gly Gly Gln Arg Gln Arg Ile Ala Leu Ala Ala Gln Cys Leu
 130 135 140
 Ser Leu Lys Pro Ile Leu Leu Leu Asp Glu Pro Phe Ser Ser Leu Asp
 145 150 155 160
 Val Leu Leu Lys Glu Gln Leu Tyr Gln Asp Ile Val Ala Leu Ala Lys
 165 170 175
 Lys Glu Asn Lys Thr Val Leu Leu Val Thr His Asp Phe His Asp Val
 180 185 190
 Ser Cys Leu Gly Asp Val Leu Tyr Val Ile Lys Asn Lys Thr Leu Thr
 195 200 205
 Pro Val Pro Leu Asp Pro Ser Met Arg Pro Leu Asn Asn Gly Leu Cys
 210 215 220
 Phe Ile Lys Asp Leu Lys Lys His Leu Tyr Thr
 225 230 235

<210>243

<211>301

<212>PRT

<213>Chlamydia pneumoniae

<400>243

Lys Lys Phe Leu Met Arg Arg Phe Leu Phe Leu Ile Leu Ser Ser Leu
 1 5 10 15
 Pro Leu Val Ala Phe Ser Ala Asp Asn Phe Thr Ile Leu Glu Glu Lys
 20 25 30
 Gln Ser Pro Leu Ser Arg Val Ser Ile Ile Phe Ala Leu Pro Gly Val
 35 40 45
 Thr Pro Val Ser Phe Asp Gly Asn Cys Ser Ile Pro Trp Phe Ser His
 50 55 60
 Ser Lys Lys Thr Leu Glu Gly Gln Arg Ile Tyr Tyr Ser Gly Asp Ser
 65 70 75 80
 Phe Gly Lys Tyr Phe Val Val Ser Ala Leu Trp Pro Asn Lys Val Ser
 85 90 95
 Ser Ala Val Val Ala Cys Asn Met Ile Leu Lys His Arg Val Asp Leu
 100 105 110
 Ile Leu Ile Ile Gly Ser Cys Tyr Ser Arg Ser Gln Asp Ser Arg Phe
 115 120 125
 Gly Ser Val Leu Val Ser Lys Gly Tyr Ile Asn Tyr Asp Ala Asp Val
 130 135 140
 Arg Pro Phe Phe Glu Arg Phe Glu Ile Pro Asp Ile Lys Lys Ser Val
 145 150 155 160
 Phe Ala Thr Ser Glu Val His Arg Glu Ala Ile Leu Arg Gly Gly Glu
 165 170 175
 Glu Phe Ile Ser Thr His Lys Gln Glu Ile Glu Glu Leu Leu Lys Thr
 180 185 190
 His Gly Tyr Leu Lys Ser Thr Thr Lys Thr Glu His Thr Leu Met Glu
 195 200 205
 Gly Leu Val Ala Thr Gly Glu Ser Phe Ala Met Ser Arg Asn Tyr Phe
 210 215 220
 Leu Ser Leu Gln Lys Leu Tyr Pro Glu Ile His Gly Phe Asp Ser Val

498

115 120 125
 Lys Leu Arg Ser Ser Glu Ala Glu Leu Val Thr Pro Val Ala Leu
 130 135 140
 Thr Thr Asp Arg Glu Glu Ile Leu Thr Glu Lys Lys Val Lys Cys Val
 145 150 155 160
 Phe Asp Ser Glu Gly Arg Ala Leu Tyr Phe Ser Arg Ser Pro Ile Pro
 165 170 175
 Phe Ile Leu Lys Lys Ala Thr Pro Val Tyr Leu His Ile Gly Val Tyr
 180 185 190
 Ala Phe Lys Arg Glu Ala Leu Phe Arg Tyr Leu Thr Ala Xaa Leu Xaa
 195 200 205
 Ser Ser
 210
 <210>246
 <211>537
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>246
 Met Pro Phe Lys Cys Ile Phe Leu Thr Gly Gly Val Val Ser Ser Leu
 1 5 10 15
 Gly Lys Gly Leu Thr Ala Ala Ser Leu Ala Leu Ile Leu Glu Arg Gln
 20 25 30
 Arg Leu Asn Val Ala Met Leu Lys Leu Asp Pro Tyr Leu Asn Val Asp
 35 40 45
 Pro Gly Thr Met Asn Pro Phe Glu His Gly Glu Ile Tyr Val Thr Asp
 50 55 60
 Asp Gly Val Glu Thr Asp Leu Asp Leu Gly His Tyr His Arg Phe Ser
 65 70 75 80
 Ser Ala Ala Leu Ser Arg His Ser Ser Ala Thr Ser Gly Gln Ile Tyr
 85 90 95
 Ala Arg Val Ile Lys Arg Glu Arg Glu Gly Asp Tyr Leu Gly Ser Thr
 100 105 110
 Val Gln Val Ile Pro His Ile Thr Asn Glu Ile Ile Gln Val Ile Leu
 115 120 125
 Asp Ala Ala Lys Glu His Ser Pro Asp Val Leu Ile Val Glu Ile Gly
 130 135 140
 Gly Thr Ile Gly Asp Ile Glu Ser Leu Pro Phe Leu Glu Ala Ile Arg
 145 150 155 160
 Gln Phe Arg Tyr Asp His Ser Glu Asp Cys Leu Asn Ile His Met Thr
 165 170 175
 Tyr Val Pro Tyr Leu Gln Ala Ala Asp Glu Val Lys Ser Lys Pro Thr
 180 185 190
 Gln His Ser Val Gln Thr Leu Arg Gly Ile Gly Ile Ile Pro Asp Ala
 195 200 205
 Ile Leu Cys Arg Ser Glu Lys Pro Leu Thr Gln Glu Val Lys Ser Lys
 210 215 220
 Ile Ser Leu Phe Cys Asn Val Pro Asn Arg Ala Val Phe Asn Val Ile
 225 230 235 240
 Asp Val Lys His Thr Ile Tyr Glu Met Pro Leu Met Leu Ala Gln Glu
 245 250 255
 Lys Ile Ala Asn Phe Ile Gly Glu Lys Leu Lys Leu Ala Thr Val Pro
 260 265 270
 Glu Asn Leu Asp Asp Trp Arg Val Leu Val Asn Gln Leu Ser Gln Asp
 275 280 285
 Leu Pro Lys Val Lys Ile Gly Val Val Gly Lys Tyr Val Gln His Arg
 290 295 300
 Asp Ala Tyr Lys Ser Ile Phe Glu Ala Leu Thr His Ala Ala Leu Arg
 305 310 315 320
 Leu Gly His Ala Ala Glu Ile Ile Pro Ile Asp Ala Glu Asp Glu Asn
 325 330 335
 Leu Thr Met Glu Leu Ser Gln Cys Asp Ala Cys Leu Val Pro Gly Gly
 340 345 350
 Phe Gly Val Arg Gly Trp Glu Gly Lys Ile Ala Ala Ala Lys Phe Cys
 355 360 365

Arg Glu Gln Gly Ile Pro Tyr Phe Gly Ile Cys Leu Gly Met Gln Val
 370 375 380
 Leu Val Val Glu Tyr Ala Arg Asn Val Leu Asn Leu Asp Gln Ala Asn
 385 390 395 400
 Ser Leu Glu Met Asp Pro Asn Thr Pro His Pro Ile Val Tyr Val Met
 405 410 415
 Glu Gly Gln Asp Pro Leu Val Ala Thr Gly Gly Thr Met Arg Leu Gly
 420 425 430
 Ala Tyr Pro Cys Leu Leu Lys Pro Gly Ser Lys Ala His Lys Ala Tyr
 435 440 445
 Asn Glu Ser Ser Leu Ile Gln Glu Arg His Arg His Arg Tyr Glu Val
 450 455 460
 Asn Pro Asp Tyr Ile Gln Ser Leu Glu Asp His Gly Leu Arg Ile Val
 465 470 475 480
 Gly Thr Cys Pro Pro Gln Gly Leu Cys Glu Ile Ile Glu Val Ser Asp
 485 490 495
 His Pro Trp Met Ile Gly Val Gln Phe His Pro Glu Phe Val Ser Lys
 500 505 510
 Leu Ile Ser Pro His Pro Leu Phe Ile Ala Phe Ile Glu Ala Ala Leu
 515 520 525
 Val Tyr Ser Lys Asp Ala Ser His Val
 530 535

<210>247

<211>154

<212>PRT

<213>Chlamydia pneumoniae

<400>247

Met Gln Ala Met Ser Lys Pro Ser Ser Cys Lys Ala Tyr Leu Gly Ile
 1 5 10 15
 Asp Tyr Gly Lys Lys Arg Ile Gly Leu Ala Tyr Ala Ala Glu Pro Leu
 20 25 30
 Leu Leu Thr Leu Pro Ile Gly Asn Ile Glu Ala Gly Lys Asn Leu Lys
 35 40 45
 Leu Ser Ala Glu Ala Leu His Lys Ile Ile Leu Ser Arg Asn Ile Thr
 50 55 60
 Cys Val Val Leu Gly Asn Pro Leu Pro Met Gln Lys Gly Leu Tyr Ser
 65 70 75 80
 Ser Leu Gln Glu Glu Val Ser Leu Leu Ala Glu Glu Leu Lys Lys Leu
 85 90 95
 Ser Thr Val Glu Ile Ile Leu Trp Asp Glu Arg Leu Ser Ser Val Gln
 100 105 110
 Ala Glu Arg Met Leu Lys Gln Asp Cys Gly Leu Ser Arg Lys Asp Arg
 115 120 125
 Lys Gly Lys Thr Asp Ser Leu Ala Ala Thr Leu Ile Leu Thr Ser Phe
 130 135 140
 Leu Asp Ser Leu Pro Lys Lys Leu Thr Leu
 145 150

<210>248

<211>390

<212>PRT

<213>Chlamydia pneumoniae

<400>248

Met Thr Asn Val Val Gln Glu Thr Ile Gly Gly Leu Asn Ser Pro Arg
 1 5 10 15
 Thr Cys Pro Pro Cys Ile Leu Val Ile Phe Gly Ala Thr Gly Asp Leu
 20 25 30
 Thr Ala Arg Lys Leu Leu Pro Ala Leu Tyr His Leu Thr Lys Glu Gly
 35 40 45
 Arg Leu Ser Asp Gln Phe Val Cys Val Gly Phe Ala Arg Arg Glu Lys
 50 55 60
 Ser Asn Glu Leu Phe Arg Gln Glu Met Lys Gln Ala Val Ile Gln Phe
 65 70 75 80
 Ser Pro Ser Glu Leu Asp Ile Lys Val Trp Glu Asp Phe Gln Gln Arg
 85 90 95

Leu Phe Tyr His Arg Glu Phe Asp Asn Asn Met Gly Thr Ser
 100 105 110
 Leu Lys Asp Ser Leu Glu Asp Leu Asp Lys Thr Tyr Gly Thr Arg Gly
 115 120 125
 Asn Arg Leu Phe Tyr Leu Ser Thr Pro Pro Gln Tyr Phe Ser Arg Ile
 130 135 140
 Ile Glu Asn Leu Asn Lys His Lys Leu Phe Tyr Lys Asn Gln Asp Gln
 145 150 155 160
 Gly Lys Pro Trp Ser Arg Val Ile Ile Glu Lys Pro Phe Gly Arg Asp
 165 170 175
 Leu Asp Ser Ala Lys Gln Leu Gln Gln Cys Ile Asn Glu Asn Leu Asn
 180 185 190
 Glu Asn Ser Val Tyr His Ile Asp His Tyr Leu Gly Lys Glu Thr Val
 195 200 205
 Gln Asn Ile Leu Thr Thr Arg Phe Ala Asn Thr Ile Phe Glu Ser Cys
 210 215 220
 Trp Asn Ser Gln Tyr Ile Asp His Val Gln Ile Ser Leu Ser Glu Thr
 225 230 235 240
 Ile Gly Ile Gly Ser Arg Gly Asn Phe Phe Glu Lys Ser Gly Met Leu
 245 250 255
 Arg Asp Met Val Gln Asn His Met Met Gln Leu Leu Cys Leu Leu Thr
 260 265 270
 Met Glu Pro Thr Thr Phe Asp Ala Asp Glu Ile Arg Lys Xaa Lys
 275 280 285
 Ile Lys Ile Leu Gln Arg Ile Ser Pro Phe Ser Glu Gly Ser Ser Ile
 290 295 300
 Val Arg Gly Gln Tyr Gly Pro Gly Thr Val Gln Gly Val Ser Val Leu
 305 310 315 320
 Gly Tyr Arg Glu Glu Glu Asn Val Asp Lys Asp Ser Arg Val Glu Thr
 325 330 335
 Tyr Val Ala Leu Lys Gln Ser Leu Ile Ile Pro Val Gly Leu Glu Phe
 340 345 350
 Leu Ser Ile Tyr Val Gln Glu Asn Asp Ser Pro Lys Asn Leu Gln Thr
 355 360 365
 Phe Leu Leu Phe Leu Lys Asn His Pro Thr Ile Tyr Leu Gln Pro Lys
 370 375 380
 Asn Val His Val Val Arg
 385 390

<210>249

<211>132

<212>PRT

<213>Chlamydia pneumoniae

<400>249

Gln Arg Phe Pro Ser Arg Asp Leu Arg Ser Phe Lys Thr Val Ile Asn
 1 5 10 15
 Asn Pro Arg Trp Leu Gly Val Pro Phe Tyr Leu Arg Ala Gly Lys Arg
 20 25 30
 Leu Ala Lys Lys Ser Thr Asp Ile Ser Ile Ile Phe Lys Lys Ser Pro
 35 40 45
 Tyr Asn Leu Phe Ala Ala Glu Cys Ser Arg Cys Pro Ile Glu Asn
 50 55 60
 Asp Leu Leu Ile Ile Arg Ile Gln Pro Asp Glu Gly Val Ala Leu Lys
 65 70 75 80
 Phe Asn Cys Lys Val Pro Gly Thr Asn Asn Ile Val Arg Pro Val Lys
 85 90 95
 Met Asp Phe Arg Tyr Asp Ser Tyr Phe Gln Thr Thr Thr Pro Glu Ala
 100 105 110
 Tyr Glu Arg Leu Leu Cys Asp Cys Ile Ile Gly Asp Arg Thr Phe Ile
 115 120 125
 Tyr Gly Gly Gly
 130

<210>250

<211>266

<212>PRT

<213>Chlamydia pneumoniae

<400>250

```

Met Thr Asn Ile Gly Ile Glu Thr Met Ala Thr Leu Ile Asn Phe Asn
 1          5          10          15
Asp Thr Asn Lys Leu Leu Leu Thr Lys Gln Pro Ser Leu Phe Ile Asp
          20          25          30
Leu Ala Ser Lys Asp Trp Ile Ala Ser Ala Asn Gln Ala Ile Lys Gln
          35          40          45
Arg Gly Ala Phe Tyr Val Ala Leu Ser Gly Gly Lys Thr Pro Leu Glu
          50          55          60
Ile Tyr Lys Asp Ile Val Ile Asn Lys Asp Lys Leu Ile Asp Pro Ser
          65          70          75          80
Lys Ile Phe Leu Phe Trp Gly Asp Glu Arg Leu Ala Pro Ile Thr Ser
          85          90          95
Ser Glu Ser Asn Tyr Gly Gln Ala Met Ser Ile Leu Arg Asp Leu Asn
          100          105          110
Ile Pro Asp Glu Gln Ile Phe Arg Met Glu Thr Glu Asn Pro Asp Gly
          115          120          125
Ala Lys Lys Tyr Gln Glu Leu Ile Glu Asn Lys Ile Pro Asp Ala Ser
          130          135          140
Phe Asp Met Ile Met Leu Gly Leu Gly Glu Asp Gly His Thr Leu Ser
          145          150          155          160
Leu Phe Ser Asn Thr Ser Ala Leu Glu Glu Glu Asn Asp Leu Val Val
          165          170          175
Phe Asn Ser Val Pro His Leu Glu Thr Glu Arg Met Thr Leu Thr Phe
          180          185          190
Pro Cys Val His Lys Gly Lys His Val Val Val Tyr Val Gln Gly Glu
          195          200          205
Asn Lys Lys Pro Ile Leu Lys Ser Val Phe Phe Ser Glu Gly Arg Glu
          210          215          220
Glu Lys Leu Tyr Pro Ile Glu Arg Val Gly Arg Asp Arg Ser Pro Leu
          225          230          235          240
Phe Trp Ile Ile Ser Pro Glu Ser Tyr Asp Ile Ala Asp Phe Asp Asn
          245          250          255
Ile Ser Ser Ile Tyr Lys Met Asp Ile Leu
          260          265

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<210>251

<211>194

<212>PRT

<213>Chlamydia pneumoniae

<400>251

```

Leu Asn Ser Phe Phe Ser Phe Asn Ser Leu Asn Ser Trp His Cys Leu
 1          5          10          15
Ser Ile Ile Phe Cys Ser Ser Trp Ser Cys Ser Arg Asn Tyr Cys Gly
          20          25          30
Asn Asp Gly Val Cys Ala Ala Gly Gly Gly Ala Leu Leu Ile Ser Leu
          35          40          45
Leu Gly Leu Trp Ile Ala Ile Val Arg Lys Ala Lys His Gln Glu Ala
          50          55          60
Cys Val Gly His Leu Thr Asn Val Val Leu His Thr Ala Val Ser Glu
          65          70          75          80
Ala Leu Leu His Asp Pro Ser His Phe Gln Thr Asn Ala Leu Ala Arg
          85          90          95
Asp Leu Phe Leu Thr Asp Cys Leu Ser His Tyr Gly His Leu Phe Ser
          100          105          110
Asn Glu Glu Val Ala Gln Leu Val Gln Gly Gly Ala Pro Gly Gly Gly
          115          120          125
Ser Arg Pro Ser Gln His Tyr Gly Gly Ser Ser Asp Tyr Gln Asn Arg
          130          135          140
Arg Gly Gly Asn Gly Asn Phe Gly Gly Ser His Phe Gly Gly Gly Gly
          145          150          155          160
Gly Phe Ala Gly Ser His Phe Gly Ala Gly Tyr Pro Thr Ala Pro Thr
          165          170          175
Met Pro Ser Ala Pro Pro Pro Phe Pro Pro Pro Ala Tyr Asp Thr Ile

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<210>253
<211>106
<212>PRT
<213>Chlamydia pneumoniae
<400>253
Lys Leu Ala Ile Ile Arg Arg Arg Arg Arg Arg Gly Lys Arg Arg Ile
 1             5             10             15
Arg Arg Val Tyr Arg Arg Ile Gly Arg Trp Arg Phe Ser Arg Asn His
          20             25             30
Val Ala Ala Thr Ile Ala Pro Leu Leu Met Lys Gln Ser Leu Val Thr
          35             40             45
Trp Arg Trp Arg Arg Leu Thr Val Gln Gly Asp Phe Ala Leu Asp Ile
          50             55             60
Ser Ile Leu Val Ile Thr Glu Glu Leu Leu Val Ser Ser Tyr Arg Leu
          65             70             75             80
Ser Lys His Phe Phe Ser Ser Trp Ser Asp Arg Lys Val Gly His Leu
          85             90             95
Asn Asn Cys Val Thr His Tyr Thr Thr Gln
          100             105

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<210>254
<211>390
<212>PRT
<213>Chlamydia pneumoniae
<400>254
Ile Phe Leu Val Lys Phe Met Ser Ala Met Ile Ser Leu Ser Ser Ser
 1             5             10             15
His Glu Ala Ser Ile Ala Ser Asn Thr Gln Val Arg Asp Val Leu Val
          20             25             30
Ser Leu Ala Met Asp Glu Phe Val Glu His Asn Thr Glu Ile Leu Pro
          35             40             45
Ile Lys Val Phe Leu Ala Arg Gly Thr Leu Ser Ser Thr Ala Ile Ile
          50             55             60
Asp Asp Leu Lys Asp Val Val Glu Thr Glu Gly Glu His His Phe Gln
          65             70             75             80

```

Val Tyr Ser Asn Ile Ser Leu Lys Met Ile Tyr Gln Asn Phe Glu
 85 90 95
 Lys Ile Phe Gly Ile Gly Cys Cys Pro Leu Leu Leu Val Thr Asp Ser
 100 105 110
 His His Thr Asp Pro Cys Gly Ala Leu Ile Thr Gly Ile Phe Ala Ala
 115 120 125
 Val Leu Phe Thr Val Leu Ala Ile Val Phe Gly Pro Thr Leu Gly Ile
 130 135 140
 Leu Cys Tyr Ser Ala Tyr Lys Ile Tyr Gln Leu Thr Lys Lys Ile Ser
 145 150 155 160
 Ser Leu Ser Arg Thr His Thr Glu Val Ile Asn Ser Val Gln Lys Ser
 165 170 175
 Asp Pro Phe Ile His Arg Ser Gly Ala Val Ala Ala Ala Ala Ser
 180 185 190
 Gln Ser Thr Ile Lys Ala Cys Lys Val Phe Arg Gln Ser Thr Leu Ile
 195 200 205
 Phe Phe Val Leu Gly Leu Ile Ile Thr Ile Ser Leu Ala Ala Leu Ile
 210 215 220
 Val Gly Leu Val Phe Ala Leu Phe Phe Leu Asp Pro Gly Ala Pro Ala
 225 230 235 240
 Val Met Thr Ala Ala Met Ile Gly Cys Cys Ala Ala Gly Gly Thr Gly
 245 250 255
 Ile Leu Leu Ser Val Ile Gly Phe Leu Leu Ala Ser Val Tyr Ser Val
 260 265 270
 Gln Lys Ser Gln Glu Gly Val His Met His Thr Ala Leu Leu Arg
 275 280 285
 Cys Ile Val Ser Asn Thr Ile Ile Gln Met Pro Tyr Leu Pro Ile Thr
 290 295 300
 Pro Gly Thr Lys Lys Val Leu Thr Gln Ser Ile Arg Arg Tyr Gln Gln
 305 310 315 320
 Phe Phe Ser Asp Asp Glu Tyr Arg Asp Ile Glu Ser Glu Val Pro Leu
 325 330 335
 Asn Arg Gln Thr Thr Pro Pro Pro Ser Tyr Glu Thr Leu Phe His Glu
 340 345 350
 Glu Gly Ser Asp Gly Ser Ser Asn Val Ile Pro Arg Glu Ser Pro Pro
 355 360 365
 Ala Tyr Ser Thr Ile Asp Ser Ser Asn Ser Pro Phe Pro Ser Ser Ser
 370 375 380
 Pro Pro Pro Tyr Tyr Arg
 385 390

<210>255

<211>125

<212>PRT

<213>Chlamydia pneumoniae

<400>255

Thr Pro Ser Trp Leu Phe Cys Thr Leu Tyr Thr Glu Ala Ser Lys Lys
 1 5 10 15
 Pro Ile Thr Glu Arg Arg Ile Pro Val Pro Pro Ala Ala Gln His Pro
 20 25 30
 Ile Ile Ala Ala Val Ile Thr Ala Gly Ala Pro Gly Ser Lys Lys Asn
 35 40 45
 Arg Ala Lys Thr Arg Pro Thr Ile Lys Ala Ala Lys Asp Ile Val Ile
 50 55 60
 Ile Lys Pro Ser Thr Lys Lys Ile Asn Val Asp Cys Leu Asn Thr Leu
 65 70 75 80
 Gln Ala Leu Ile Val Asp Cys Glu Ala Ala Ala Ala Thr Ala Pro
 85 90 95
 Glu Arg Cys Ile Lys Gly Ser Asp Phe Cys Thr Glu Phe Met Thr Ser
 100 105 110
 Val Trp Val Leu Asp Lys Glu Asp Ile Phe Leu Val Ser
 115 120 125

<210>256

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>256

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Arg His Leu Lys Cys Asp Pro Arg Leu Thr Leu Ser Pro Gly Lys Ala
 1              5              10              15
Leu Asp Ala Leu His Asn Leu Asn Gly Asn Glu Arg Ser Arg Asn Arg
              20              25              30
Thr Phe Lys Ile Asn Lys Thr Thr Leu Thr Thr Ala Gln Thr Thr Ala
              35              40              45
Ile Thr Gly Tyr Asn Ile Val Ser Thr Thr Lys Gln Ala Val Phe Leu
              50              55              60
Thr Gln Gly Phe Ile Ile Ile Ile Ser Leu Arg His Ser Lys Lys Asn
              65              70              75              80
Arg Thr Ser His Lys Asn Asn Arg Trp Phe Leu Arg Lys Leu Ile
              85              90              95

```

<210>257

<211>291

<212>PRT

<213>Chlamydia pneumoniae

<400>257

```

Thr Cys Gln Lys Glu Ile Met Lys His Tyr Leu Ser Phe Ser Pro Ser
 1              5              10              15
Ala Asp Phe Phe Ser Lys Gln Gly Ala Ile Glu Thr Gln Val Leu Phe
              20              25              30
Gly Glu Arg Val Leu Val Lys Gly Ser Thr Cys Tyr Ala Tyr Ser Gln
              35              40              45
Leu Phe His Asn Glu Leu Leu Trp Lys Pro Tyr Pro Gly His Ser Phe
              50              55              60
Arg Ser Thr Leu Val Pro Cys Thr Pro Glu Phe His Ile His Pro Asn
              65              70              75              80
Val Ser Val Val Ser Val Asp Ala Phe Leu Asp Pro Trp Gly Ile Pro
              85              90              95
Leu Pro Phe Gly Thr Leu Leu His Val Asn Ser Gln Asn Thr Val Ile
              100              105              110
Phe Pro Lys Asp Ile Leu Asn His Met Asn Thr Ile Trp Gly Ser Gly
              115              120              125
Thr Pro Gln Cys Asp Pro Arg His Leu Arg Arg Leu Asn Tyr Asn Phe
              130              135              140
Phe Ala Glu Leu Leu Ile Lys Asp Ala Asp Leu Leu Leu Asn Phe Pro
              145              150              155              160
Tyr Val Trp Gly Gly Arg Ser Val His Glu Ser Leu Glu Lys Pro Gly
              165              170              175
Val Asp Cys Ser Gly Phe Ile Asn Ile Leu Tyr Gln Ala Gln Gly Tyr
              180              185              190
Asn Val Pro Arg Asn Ala Ala Asp Gln Tyr Ala Asp Cys His Trp Ile
              195              200              205
Ser Ser Phe Glu Asn Leu Pro Ser Gly Gly Leu Ile Phe Leu Tyr Pro
              210              215              220
Lys Glu Glu Lys Arg Ile Ser His Val Met Leu Lys Gln Asp Ser Ser
              225              230              235              240
Thr Leu Ile His Ala Ser Gly Gly Gly Lys Lys Val Glu Tyr Phe Ile
              245              250              255
Leu Glu Gln Asp Gly Lys Phe Leu Asp Ser Thr Tyr Leu Phe Phe Arg
              260              265              270
Asn Asn Gln Arg Gly Arg Ala Phe Phe Gly Ile Pro Arg Lys Arg Lys
              275              280              285
Ala Phe Leu
              290

```

<210>258

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>258

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Val Val Ala Lys Ser Thr Ile Gln Glu Ser Val Ala Thr Gly Arg Arg
 1              5              10              15

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Lys Gln Ala Val Ser Val Arg Leu Arg Pro Gly Ser Lys Ile
 20 25 30
 Asp Val Asn Gly Lys Ser Phe Glu Asp Tyr Phe Pro Leu Glu Ile Gln
 35 40 45
 Arg Thr Thr Ile Leu Ser Pro Leu Lys Lys Ile Thr Glu Asp Gln Ser
 50 55 60
 Gln Tyr Asp Leu Ile Ile Arg Val Ser Gly Gly Gly Ile Gln Gly Gln
 65 70 75 80
 Val Ile Ala Thr Arg Leu Gly Leu Ala Arg Ala Leu Leu Lys Glu Asn
 85 90 95
 Glu Glu Asn Arg Gln Asp Leu Lys Ser Cys Gly Phe Leu Leu Glu Ile
 100 105 110
 Leu Glu Gly Lys Asn Val Lys Asn Thr Asp Ile Lys Lys Leu Val Lys
 115 120 125
 Ala Ser Asn Ser Leu Ser Val Lys Ile Phe Thr Val Phe Arg Ile Val
 130 135 140
 Phe Gly Lys Ser Leu Ser Tyr Tyr Arg Lys Ala Phe Leu Phe Leu Gly
 145 150 155 160
 Ile Pro Lys Asn Ala Arg Pro Leu
 165

<210>259

<211>149

<212>PRT

<213>Chlamydia pneumoniae

<400>259

Met Glu Lys Arg Lys Asp Thr Lys Thr Thr Ile Val Lys Ser Ser Glu
 1 5 10 15
 Thr Thr Lys Ser Trp Tyr Val Val Asp Ala Ala Gly Lys Thr Leu Gly
 20 25 30
 Arg Leu Ser Ser Glu Val Ala Lys Ile Leu Arg Gly Lys His Lys Val
 35 40 45
 Thr Tyr Thr Pro His Val Ala Met Gly Asp Gly Val Ile Val Ile Asn
 50 55 60
 Ala Glu Lys Val Arg Leu Thr Gly Ala Lys Lys Gly Gln Lys Ile Tyr
 65 70 75 80
 Arg Tyr Tyr Thr Gly Tyr Ile Ser Gly Met Arg Glu Ile Pro Phe Glu
 85 90 95
 Asn Met Met Ala Arg Lys Pro Asn Tyr Ile Ile Glu His Ala Ile Lys
 100 105 110
 Gly Met Met Pro Arg Thr Arg Leu Gly Lys Lys Gln Leu Lys Ser Leu
 115 120 125
 Arg Ile Val Lys Gly Asp Ser Tyr Glu Thr Phe Glu Ser Gln Lys Pro
 130 135 140
 Ile Leu Leu Asp Ile
 145

<210>260

<211>226

<212>PRT

<213>Chlamydia pneumoniae

<400>260

Met Ser Leu Leu Ile Glu Ala Lys Asn Leu Ser Lys Thr Ile Gln Gln
 1 5 10 15
 Gln Asn Gln Asn Ile Ser Ile Leu Thr Asp Val Ser Leu Ser Leu His
 20 25 30
 Ala Gly Glu Thr Ile Ser Ile Thr Gly Ala Ser Gly Asn Gly Lys Thr
 35 40 45
 Thr Leu Leu His Leu Leu Gly Thr Leu Asp Val Pro Ser Ser Gly Ser
 50 55 60
 Leu Arg Phe Phe Asp Lys Asp Leu Lys Asn Gln Asp Leu Ala Asn Phe
 65 70 75 80
 Arg Asn Gln His Ile Gly Phe Val Phe Gln Asn Phe Tyr Leu Leu Glu
 85 90 95
 Asp Asp Thr Val Leu Lys Asn Val Leu Met Pro Ala Leu Ile Ala Arg
 100 105 110

Lys Asn Ile Ser Lys Ser Pro Val Tyr Thr Arg Ala Leu Glu Leu
 115 120 125
 Leu Asp Leu Val Asn Leu Glu Asp Lys Val Arg Thr Arg Cys Ser Lys
 130 135 140
 Leu Ser Gly Gly Glu Lys Gln Arg Val Ala Ile Ala Arg Ala Leu Ile
 145 150 155 160
 Asn Glu Pro Ala Ile Leu Leu Ala Asp Glu Pro Ser Gly Asn Leu Asp
 165 170 175
 Glu Glu Thr Ser Glu Gln Ile His Asn Leu Leu Leu Glu Gln Ala Ser
 180 185 190
 Ala Leu Cys Gly Ile Leu Ile Val Thr His Asn Lys His Leu Ala Ser
 195 200 205
 Arg Cys Ser Arg Glu Gly Val Leu Ser Asn Gly Lys Leu Phe Phe His
 210 215 220
 Asn Ser
 225
 <210>261
 <211>506
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>261
 Leu Glu Val Met Lys Phe Glu Phe Ser Val Ala Leu Lys Tyr Leu Ile
 1 5 10 15
 Pro Gly Arg Gly Arg Leu Tyr Ser Ala Ile Val Ser Leu Phe Ser Val
 20 25 30
 Gly Ile Ile Ser Leu Val Val Trp Leu Ser Ile Val Phe Ile Ser Val
 35 40 45
 Ile His Gly Leu Glu Gln Arg Trp Ile Glu Asp Leu Ser Gln Leu His
 50 55 60
 Ser Pro Ile Thr Ile Leu Pro Ser Asp Thr Tyr Tyr Ser Ser Tyr Tyr
 65 70 75 80
 Tyr Gln Ile Asp Lys His Ser Ser Leu Ser Asn Tyr Thr Thr Lys Thr
 85 90 95
 Leu Gly Glu Lys Ile Ala Ser Pro Gln Val Asp Pro Tyr Asp Pro Glu
 100 105 110
 Ser Asp Tyr Leu Leu Pro Glu Thr Phe Pro Leu Lys Asp Cys Asp Leu
 115 120 125
 Gly Gly Gln Gln Lys Asp Pro Val Lys Met Thr Leu Glu Ser Leu Gly
 130 135 140
 Pro Tyr Leu Gln Ser Gln His Gly Lys Val Ile Glu Phe Glu Gln Gly
 145 150 155 160
 Val Gly Tyr Leu Asp Ile Lys Thr Ser Leu Lys Leu Gln Lys Pro Gln
 165 170 175
 Pro Arg Asn Leu Thr His Phe Leu Thr Tyr Pro Ser Lys Leu Ser Tyr
 180 185 190
 Glu Asp Lys Val Leu Pro Tyr Asp Glu Thr Asp Tyr Thr Ser Ala Glu
 195 200 205
 Leu Asn Pro Phe Asn Arg Ser Pro Ser Gly Trp Gln Gln Asp Phe His
 210 215 220
 His Leu Glu Glu Leu Tyr Arg Gly Ala Ser Ile Ile Leu Pro Ser Thr
 225 230 235 240
 Tyr Lys Asp Ser Gly Tyr Lys Val Gly Asp Thr Gly Val Phe Ser Thr
 245 250 255
 Tyr Ser Ile Glu Asn Glu Lys Glu Thr Gln Tyr Thr Val His Val Ile
 260 265 270
 Gly Phe Tyr Asn Pro Gly Leu Ser Pro Leu Gly Gly Arg Thr Val Phe
 275 280 285
 Ile Asp Pro Asp Leu Ala Arg Ser Ile Arg Ser Gln Ser Glu Gly Leu
 290 295 300
 Gly Met Ser Asn Gly Phe His Leu Phe Phe Pro Asn Thr Lys Arg Ile
 305 310 315 320
 Val Phe Val Lys Lys Gln Ile Glu Asn Ile Leu Thr Ser Leu Gly Val
 325 330 335
 Asp Asp Tyr Trp Glu Ile Ser Ser Leu His Asp Tyr Asp Tyr Phe Gln

340 345 50
 Pro Ile Leu Asp Gln Leu Gln Ser Asp Gln Val Leu Phe Leu Phe Val
 355 360 365
 Cys Ile Leu Ile Leu Ile Val Ala Cys Ser Asn Ile Val Thr Met Ser
 370 375 380
 Met Leu Leu Val Asn Asn Lys Lys Lys Glu Ile Gly Ile Leu Lys Ala
 385 390 395 400
 Met Gly Thr Ser Ser Arg Ser Leu Lys Ile Ile Phe Ala Cys Cys Gly
 405 410 415
 Ala Phe Ser Gly Ala Cys Gly Val Val Ile Gly Thr Ile Phe Ala Ile
 420 425 430
 Ile Thr Leu Lys Asn Leu Gln Phe Ile Val Lys Ala Leu Asn Tyr Leu
 435 440 445
 Gln Gly Arg Glu Thr Phe Asn Thr Ala Phe Phe Gly Gln Asn Leu Pro
 450 455 460
 Asn Ser Val His Pro Gln Ala Ile Tyr Phe Leu Gly Leu Gly Thr Leu
 465 470 475 480
 Leu Leu Ala Ala Val Ser Gly Ala Leu Pro Ala Arg Lys Val Ala Lys
 485 490 495
 Met His Val Ser Glu Ile Leu Lys Ala Asp
 500 505

<210>262

<211>84

<212>PRT

<213>Chlamydia pneumoniae

<400>262

Phe Ser Ala Phe Thr Met Asn Cys Lys Phe Phe Asn Val Ile Ile Ala
 1 5 10 15
 Asn Ile Val Pro Ile Thr Thr Pro Gln Ala Pro Glu Asn Ala Pro Gln
 20 25 30
 Gln Ala Lys Met Ile Phe Lys Leu Arg Asp Asp Val Pro Ile Ala Leu
 35 40 45
 Arg Met Pro Ile Ser Phe Phe Leu Leu Phe Thr Arg Ser Ile Asp Ile
 50 55 60
 Val Thr Met Leu Glu Gln Ala Thr Ile Arg Ile Ser Met His Thr Lys
 65 70 75 80
 Arg Lys Arg Thr

<210>263

<211>503

<212>PRT

<213>Chlamydia pneumoniae

<400>263

Leu Pro Trp Met Ser Pro Phe Lys Lys Ile Val Asn Arg Leu Leu Cys
 1 5 10 15
 Tyr Ile Ser Phe Gln Lys Glu Ser Arg Thr Leu Pro Ile Ile Ile Arg
 20 25 30
 Glu Pro Arg Met Thr Thr Lys Ser Leu Gly Ser Phe Asn Ser Val Ile
 35 40 45
 Ser Lys Asn Lys Ile His Phe Ile Ser Leu Gly Cys Ser Arg Asn Leu
 50 55 60
 Val Asp Ser Glu Val Met Leu Gly Ile Leu Leu Lys Ala Gly Tyr Glu
 65 70 75 80
 Ser Thr Asn Glu Ile Glu Asp Ala Asp Tyr Leu Ile Leu Asn Thr Cys
 85 90 95
 Ala Phe Leu Lys Ser Ala Arg Asp Glu Ala Lys Asp Tyr Leu Asp His
 100 105 110
 Leu Ile Asp Val Lys Lys Glu Asn Ala Lys Ile Ile Val Thr Gly Cys
 115 120 125
 Met Thr Ser Asn His Lys Asp Glu Leu Lys Pro Trp Met Ser His Ile
 130 135 140
 His Tyr Leu Leu Gly Ser Gly Asp Val Glu Asn Ile Leu Ser Ala Ile
 145 150 155 160
 Glu Ser Arg Glu Ser Gly Glu Lys Ile Ser Ala Lys Ser Tyr Ile Glu

165 Met Gly Glu Val Pro Arg Gln Leu Ser Thr Pro Lys His Tyr Ala Tyr
 180
 185
 190
 195 Leu Lys Val Ala Glu Gly Cys Arg Lys Arg Cys Ala Phe Cys Ile Ile
 200
 205
 210 Pro Ser Ile Lys Gly Lys Leu Arg Ser Lys Pro Leu Asp Gln Ile Leu
 215
 220
 225 Lys Glu Phe Arg Ile Leu Val Asn Lys Ser Val Lys Glu Ile Ile Leu
 230
 235
 240
 245 Ile Ala Gln Asp Leu Gly Asp Tyr Gly Lys Asp Leu Ser Thr Asp Arg
 250
 255
 260 Ser Ser Gln Leu Glu Ser Leu Leu His Glu Leu Leu Lys Glu Pro Gly
 265
 270
 275 Asp Tyr Trp Leu Arg Met Leu Tyr Leu Tyr Pro Asp Glu Val Ser Asp
 280
 285
 290 Gly Ile Ile Asp Leu Met Gln Ser Asn Pro Lys Leu Leu Pro Tyr Val
 295
 300
 305 Asp Ile Pro Leu Gln His Ile Asn Asp Arg Ile Leu Lys Gln Met Arg
 310
 315
 320 Arg Thr Thr Ser Arg Glu Gln Ile Leu Gly Phe Leu Glu Lys Leu Arg
 325
 330
 335
 340 Ala Lys Val Pro Gln Val Tyr Ile Arg Ser Ser Val Ile Val Gly Phe
 345
 350
 355 Pro Gly Glu Thr Gln Glu Glu Phe Gln Glu Leu Ala Asp Phe Ile Gly
 360
 365
 370 Glu Gly Trp Ile Asp Asn Leu Gly Ile Phe Leu Tyr Ser Gln Glu Ala
 375
 380
 385 Asn Thr Pro Ala Ala Glu Leu Pro Asp Gln Ile Pro Glu Lys Val Lys
 390
 395
 400 Glu Ser Arg Leu Lys Ile Leu Ser Gln Ile Gln Lys Arg Asn Val Asp
 405
 410
 415
 420 Lys His Asn Gln Lys Leu Ile Gly Glu Lys Ile Glu Ala Val Ile Asp
 425
 430
 435 Asn Tyr His Pro Glu Thr Asn Leu Leu Leu Thr Ala Arg Phe Tyr Gly
 440
 445
 450 Gln Ala Pro Glu Val Asp Pro Cys Ile Ile Val Asn Glu Ala Lys Leu
 455
 460
 465 Val Ser His Phe Gly Glu Arg Cys Phe Ile Glu Ile Thr Gly Thr Ala
 470
 475
 480 Gly Tyr Asp Leu Val Gly Arg Val Val Lys Lys Ser Gln Asn Gln Ala
 485
 490
 495
 Leu Leu Lys Thr Ser Lys Ala
 500

<210>264

<211>179

<212>PRT

<213>Chlamydia pneumoniae

<400>264

Ala Thr Ser Thr Val Cys Ala Leu Trp Ile Leu Gln Thr Tyr Gln Ser
 1 5 10 15
 His Asp Asp Ala Ala Ser Cys Ser Phe Arg Arg Ala Cys Arg Phe Gly
 20 25 30
 Arg Tyr Trp Leu Gly Gly Val Asn Val Pro Trp Asn Lys Phe Asn Gln
 35 40 45
 Thr Ser Thr Gln Ser Thr Val Ile Asn Ser Ala Ile Tyr Ile Asp Ser
 50 55 60
 Ser Gln Thr Trp Met Met Arg Phe Gln Ala Ser Ala Ser Ile Pro Arg
 65 70 75 80
 Leu Phe Arg Ile Ser Ile Phe Met Thr Lys His Gly Asp Trp Ile Asp
 85 90 95
 Asn Gly Thr Gly Gly Glu Leu Leu Leu Val Ala Tyr Glu Ala Asn Gln
 100 105 110
 Asn Pro Leu Phe Pro Asp Ile Arg Ile Glu Leu Ala Met Ser Thr Cys
 115 120 125

Ser Gly Thr Ser Tyr Arg Ala Arg Pro Met Gln Trp Leu Cys Ser
 130 135 140
 Thr Tyr Tyr Ala Val Arg Pro Gly Tyr Phe Val Leu Glu Asn Arg Ser
 145 150 155 160
 Tyr Ser Phe Arg Val Gln Ser Phe Ser Trp Asn Ile Ala Thr Leu Pro
 165 170 175
 Phe Val Asn

<210>265

<211>175

<212>PRT

<213>Chlamydia pneumoniae

<400>265

Phe Cys Gly Gly Arg Leu Met Ser Ser Ser Ile Pro Thr Thr Gln Lys
 1 5 10 15
 Ile Thr Ile Ser Ile Pro Thr Phe Val Arg Phe Asn Ile Glu Ser Ile
 20 25 30
 Asn Leu Thr Asp Glu Gln Lys Lys Thr Ala Leu Thr Ile Gly Gln Asn
 35 40 45
 Ile Ala Thr Glu Asn Thr Gln Val Leu Gly Asn Phe Val Asp Ala Asp
 50 55 60
 Gly Gly Leu Ile Cys Gln Asn Asp Leu Ser Val Gly Gly Asn Ile Asn
 65 70 75 80
 Ile Thr Pro Gln Thr Phe Asn Thr Met Val Phe Asn Gly Arg Val Asn
 85 90 95
 Leu Ser Asn Ser Pro Phe Ser Tyr Gln Asp Ser Leu Gly Asn Lys Arg
 100 105 110
 Gln Asp Tyr Ala Asn Ile Asn Thr Glu Gln Pro Gln Gln Tyr Val Pro
 115 120 125
 Tyr Gly Tyr Tyr Lys Leu Thr Arg Val Met Met Met Gln Arg Ala Ala
 130 135 140
 Leu Ser Gly Gly His Val Gly Ser Gly Asp Ile Gly Trp Gly Glu Ser
 145 150 155 160
 Met Tyr Leu Gly Ile Ser Ser Ile Lys Arg Gln His Lys Val Gln
 165 170 175

<210>266

<211>264

<212>PRT

<213>Chlamydia pneumoniae

<400>266

Ile Pro Met Lys Thr Leu Gly Val Lys Asp Gln Asn Leu Phe Ile Asp
 1 5 10 15
 Gln Ala Thr Leu Ser Val Glu Arg Asn Val Arg Ile Glu Asn Asn Leu
 20 25 30
 Glu Thr Arg Asp Leu Lys Val Leu Asp Thr Thr Thr Ser Pro Cys Glu
 35 40 45
 Phe Ile Val Lys Gly Asn Val Ser Ala Glu Gly Ser Gln Leu Asn Ala
 50 55 60
 Thr Thr Leu Ser Asp Gly Phe Asn Ile Tyr Ser Lys Thr Asp Val Ser
 65 70 75 80
 Gln Thr Pro Val Cys Asn Asn Ile Ser Asp Pro Gln Ser Ala Arg Asp
 85 90 95
 Ala Leu Thr Phe Ser Tyr Tyr Arg Lys Thr Gly Cys Gln Ala Ala Asn
 100 105 110
 Leu Tyr Thr Tyr Tyr Pro Gly Asn Gly Tyr Tyr Val Ala Pro Asn Thr
 115 120 125
 Thr Ile Glu Thr His Val Ala Ala Ile Thr Ser Lys Ser Val Ser Arg
 130 135 140
 Asn Ala Thr Pro Asp Phe Ser Arg Tyr Ala Asp Ile Glu Pro Val Val
 145 150 155 160
 Lys Leu Lys Gln Val Gly Ile Tyr Gln Val Thr Met Gln Leu Thr Arg
 165 170 175
 Trp Ser Gly Gln His Asp Gly Asp Asn Ser Ala Thr Leu Ile Leu Asn
 180 185 190

Phe Val Ser Gly Asn Lys Thr Leu Leu Cys Thr Ser A Thr Arg
 195 200 205
 Gly Gly Tyr Ser Ser Asp Arg Thr Ser Val Ala Val Thr Ala Ile Phe
 210 215 220
 Ser Val Thr Glu Leu Val Ser Ser Pro Pro Tyr Asp Tyr Pro Trp Ile
 225 230 235 240
 Asn Leu Glu Ser Thr Ile Trp Met Asn Leu Met Ser Leu Ser Thr Cys
 245 250 255
 Gly His Leu Val Ser Ile Ser Ile
 260

<210>267

<211>285

<212>PRT

<213>Chlamydia pneumoniae

<400>267

Thr Leu Leu Lys Val Ile Met Lys Asn Asn Ile Asn Asn Asn Glu Cys
 1 5 10 15
 Tyr Phe Lys Leu Asp Ser Thr Val Asp Gly Asp Leu Leu Ala Ala Asn
 20 25 30
 Leu Lys Thr Phe Asp Thr Gln Ala Gln Gly Ile Ser Ser Thr Glu Thr
 35 40 45
 Phe Ser Val Gln Gly Asn Ala Thr Phe Lys Asp Gln Val Ser Ala Thr
 50 55 60
 Gly Leu Thr Ser Gly Thr Tyr Asn Leu Asn Ala Gln Asn Phe Thr
 65 70 75 80
 Ser Ser Gln Ile Ser Ile Asp Phe Lys Asn Asn Arg Leu Ser Asn Cys
 85 90 95
 Ala Leu Pro Lys Glu Asp Cys Asp Pro Val Pro Ala Asn Tyr Val Arg
 100 105 110
 Ser Pro Glu Tyr Phe Phe Cys Ser Lys Pro Leu Ile Gly Asp Phe Asp
 115 120 125
 Phe Asn Ser Gly Glu Ser Tyr Leu Pro Leu Thr Gly Ser Glu Tyr Thr
 130 135 140
 Leu Tyr Gln Ser Arg Asn Val Asn Ser Ile Phe Arg Phe Ile Gly Trp
 145 150 155 160
 Lys Gln Ser Thr Arg Glu Leu Thr Val Gly Gly Asn Thr Ala Ile Gln
 165 170 175
 Phe Leu Ala Ala Gly Thr Tyr Ile Val Ser Phe Thr Val Gly Lys Arg
 180 185 190
 Trp Gly Trp Asn Asn Gly Trp Gly Gly Ala Ile Tyr Ile Asn Asn Gly
 195 200 205
 Leu Gly Gln Val Gln Cys Glu Ser Thr Ile Tyr Ser Gly Gly Gly Tyr
 210 215 220
 Ala Thr Ile Gly Thr Leu Gly Thr Ser Ile Tyr Arg Ala Ser Val Asp
 225 230 235 240
 Val Ala Pro Asn Pro Asn Asp Pro Asn Ala Ser Asp Arg Tyr Arg Ala
 245 250 255
 Gly Ile Phe Tyr Leu Ser Asn Gly Gly Ser Ser Ala Gly Ile Gly Asn
 260 265 270
 Tyr Ser Phe Ser Leu Leu Tyr Tyr Pro Asp Asp Arg Gly
 275 280 285

<210>268

<211>295

<212>PRT

<213>Chlamydia pneumoniae

<400>268

Phe Cys Gly Gly Arg Leu Met Ser Asn Pro Thr Pro Lys Thr Lys Ile
 1 5 10 15
 Ser Ile Pro Thr Phe Val Arg Phe Asn Ile Gln Ser Ile Asn Leu Thr
 20 25 30
 Glu Asp Gln Lys Lys Thr Thr Phe Thr Val Gly Gly Lys Val Thr Thr
 35 40 45
 Glu Asn Thr Val Val Arg Gly Asp Leu Thr Cys Thr Asp Gly Gly Leu
 50 55 60

Thr Cys Gln Ser A Leu Thr Ile Gln Lys Asp Ile Asn Ile Arg Pro
 65 70 75 80
 Thr Ser Thr Asn Ser Met Val Phe Asp Gly Arg Leu Asn Leu Ser Asn
 85 90 95
 Ser Pro Leu Ser Tyr Lys Asn Ser Gln Gly Gln Asp Ile Thr Asp Tyr
 100 105 110
 Glu Lys Met Ser Ser Gly Lys Pro Gln Glu Tyr Val Pro Phe Gly Tyr
 115 120 125
 Tyr Lys Arg Thr Gln Ile Met Met Ala Gln Arg Ala Ala His Ser Ser
 130 135 140
 Gly Tyr Val Gly Gly Gly Ser Val Pro Ser Gly Ser Tyr Val Pro Trp
 145 150 155 160
 Asn Lys Phe Asp Gln Thr Ser Thr Gln Lys Thr Ser Gly Thr Glu Ile
 165 170 175
 Tyr Ile Asp Pro Asn Asp Ser Thr Lys Leu Val Phe Glu Val Asn Asn
 180 185 190
 Lys Val Pro Lys Leu Phe Arg Ile Ser Val Ile Met Ala Lys His Gly
 195 200 205
 Ser Trp Leu Asp Asn Gly Thr Gly Ala Asp Ile Leu Leu Ala Ala Asn
 210 215 220
 Glu Tyr Glu Gln Gly Gly Gly Arg Ile Asn Val Thr Asp Leu Ala Met
 225 230 235 240
 Thr Thr Ser Arg Gly Ser Ser Tyr Tyr Glu Thr Arg Pro Leu Gln Val
 245 250 255
 Val Cys Val Thr Tyr Tyr Ala Gln Asn Asn Gly Tyr Phe Thr Phe Gln
 260 265 270
 Asn Arg Ala Gly Gly Gly Leu Arg Val Ser Phe Phe Ser Trp Asn Ile
 275 280 285
 Val Ala Leu Pro Tyr Val Glu
 290 295

<210>269

<211>290

<212>PRT

<213>Chlamydia pneumoniae

<400>269

Gly Val Val Met Lys Arg Arg Asn Leu Gln Lys Ile Leu Pro Asn Ala
 1 5 10 15
 Ser Thr Pro Ser Thr Asn Val Ala Glu Asn Thr Gly Ile Lys Asp Gln
 20 25 30
 Asn Leu Phe Leu Asp Gln Ala Thr Leu Asn Val Asp Gly Asn Val Asp
 35 40 45
 Ile Glu Asn Phe Leu Glu Thr Arg Asp Leu Lys Val Ala Asp Thr Ile
 50 55 60
 Thr Ser Pro Cys Glu Phe Thr Val Gly Gly Gly Leu Ser Ala Glu Ser
 65 70 75 80
 Ser Gln Phe Lys Ala Thr Thr Leu Ser Lys Gly Leu Glu Ile Thr Ser
 85 90 95
 Glu Asp Gln Asp Gly Arg Val Pro Lys Phe Thr Asn Val Ser Asp Pro
 100 105 110
 Gln Ser Pro Arg Asp Ala Leu Thr Tyr Asn Tyr Tyr Arg Asn Thr Gly
 115 120 125
 Cys Gln Ala Leu Asn Leu Tyr Thr Tyr Tyr Ser Ser Gln Pro Thr
 130 135 140
 Thr Val Gly Lys Pro Ile Glu Thr Val Cys Gln Asn Pro Asn Pro Glu
 145 150 155 160
 Thr Tyr Arg Ile Ser Ala Ser Ala Lys Ile Tyr Asp Ala Val Thr Arg
 165 170 175
 Phe Pro Tyr Ile Gln Phe Lys Ala Pro Gly Ile Tyr Gln Val Thr Ile
 180 185 190
 Gln Ile Arg Arg Glu Ser Gly Gln His Ser Gly Leu Asp Asn Pro Asn
 195 200 205
 Leu Tyr Leu Asn Leu Met Ile Gly Asn Asn Lys Thr Leu Leu Cys Ala
 210 215 220
 Ser Asp Thr Arg Gly Tyr Ser Gly Gly His Arg Thr Ser Ile Ala Val

225 235 240
 Thr Gly Thr Phe Thr Leu Thr Glu Ile Val Ala Thr Pro Phe His Asp
 245 250 255
 Tyr Pro Trp Leu Phe Leu Glu Thr Thr Ile Gly Leu Asp Ile Lys Ser
 260 265 270
 Met Ser Thr Cys Val Ile Trp Phe Pro Phe Gln Ala Asn Phe Ala Glu
 275 280 285

Val Asp
 290

<210>270

<211>134

<212>PRT

<213>Chlamydia pneumoniae

<400>270

Cys Phe Ser Phe Cys Arg Leu Gly Ser Lys Phe Glu Lys Ile Thr Leu
 1 5 10 15
 Gly Gly Asn Thr Ala Ile Gln Leu Leu Ala Ala Gly Thr Tyr Ile Leu
 20 25 30
 Thr Phe Thr Ile Gly Lys Arg Trp Gly Trp Asn Asn Gly Trp Gly Gly
 35 40 45
 Ser Ile Arg Leu Phe Glu Gly Lys Tyr Thr Gly Asp Gly Thr Met Leu
 50 55 60
 Cys Gly Ser Thr Val Tyr Ser Gly Gly Gly Tyr Ser Thr Ile Gly Tyr
 65 70 75 80
 Leu Ser Thr Ala Val Tyr Arg Asp His Ser Asp Ile Asp Pro Asp Pro
 85 90 95
 Asn Asn Pro Ser Asp Lys Tyr Met Asn Asn Phe Leu Phe Val Arg Asn
 100 105 110
 Gly Asp His Ser Ala Val Ile Gly Asn Tyr Ser Phe Thr Leu Leu Tyr
 115 120 125
 Phe Ala Gly Asp Lys Val
 130

<210>271

<211>197

<212>PRT

<213>Chlamydia pneumoniae

<400>271

Ile Tyr Phe Val Phe Lys Arg Lys Thr Tyr Asn Tyr Phe Ile Glu Met
 1 5 10 15
 Thr Thr Thr Asn Asn Gln Asp Asn Asn Glu Cys Tyr Phe Lys Leu Asp
 20 25 30
 Ser Thr Val Asp Gly Asp Leu Leu Ala Ser Asn Ile Gln Thr Phe Asp
 35 40 45
 Lys Gln Ala Lys Gly Ile Ser Ser Thr Glu Thr Phe Ser Val Gln Gly
 50 55 60
 Asn Ala Thr Phe Lys Glu Lys Val Ser Ala Thr Gly Leu Thr Ser Ala
 65 70 75 80
 Ser Thr Tyr Lys Leu Asn Ala Thr Gly Pro Ala Pro Ser Ser Ile Thr
 85 90 95
 Ile Asp Met Lys Asn Asn Arg Leu Ser Asn Pro Ala Leu Pro Lys Asn
 100 105 110
 Pro Cys Asp Pro Val Pro Ala Asn Tyr Val Arg Ser Pro Gln Tyr Phe
 115 120 125
 Phe Cys Ala Lys Pro Ile Glu Gly Thr Phe Met Phe Asp Gly Ser Ser
 130 135 140
 Arg Tyr Leu Pro Ile Thr Gly Asp Gly Ser Asn Tyr Thr Leu Tyr Gln
 145 150 155 160
 Ser Ser Lys Ala Gly Asp Val Phe Arg Phe Val Asp Trp Asp Gln Asn
 165 170 175
 Ser Lys Lys Leu His Leu Gly Gly Thr Gln Pro Tyr Asn Phe Leu Leu
 180 185 190
 Gln Glu Pro Ile Ser
 195

<210>272

<211>181

<212>PRT

<213>Chlamydia pneumoniae

<400>272

Ala Tyr Leu Asp Phe Ser Lys Arg Ser Cys Val Glu Glu Asp His Val
 1 5 10 15
 Ser Lys Lys Ile Asn Arg Asn Asp Leu Cys Pro Cys Gly Ser Asn Lys
 20 25 30
 Lys Tyr Lys Gln Cys Cys Leu Lys Lys Glu Glu Gln Thr Ala Arg Tyr
 35 40 45
 Thr Thr Glu Gly Lys Phe Lys Phe Ser Ala Glu Val Leu Ser Ala Ser
 50 55 60
 Glu Gln Gly Glu Ala Gly Asp Asn Cys Thr Lys Leu Phe Gln Arg Leu
 65 70 75 80
 Ser Gln Ser Leu Thr Ser Glu Gln Lys Ala Ala Val Gly Lys Phe His
 85 90 95
 Gln Ile Thr Lys Asn Lys Glu Val Met Ser Lys Lys Ala Leu Lys Lys
 100 105 110
 Ala Gln Ala Lys Glu Glu Lys Leu Val Thr Glu Lys Leu Gln Gln His
 115 120 125
 Asn Phe Glu Ile Leu Asn Thr Gly Glu Asn Leu Ala Pro Pro Met Glu
 130 135 140
 Ser Thr Ala Thr Leu Asn Gln Asp Thr Asn Phe Val Cys Glu Asp Phe
 145 150 155 160
 Ile Pro Thr Gln Glu Asp Phe Arg Ile Ser Glu Asn Ser Gln Lys Pro
 165 170 175
 Pro Val Glu Glu Asp
 180

<210>273

<211>206

<212>PRT

<213>Chlamydia pneumoniae

<400>273

Met Ser Thr Leu Leu Leu Asn Pro Pro Trp Met Lys Ala Gly Lys Arg
 1 5 10 15
 Ile Glu Ser Leu Val Arg Lys Ala Leu Tyr Thr His Thr Met Leu Ala
 20 25 30
 Asn His Arg Lys Ile Val Val Ala Leu Ser Gly Gly Lys Asp Ser Leu
 35 40 45
 Thr Leu Leu Leu Met Leu Lys Ala Ile Ser Gly Arg Gly Phe Pro Asp
 50 55 60
 Leu Asp Leu His Ala Val Asn Ile Gly Gly Lys Tyr Ser Cys Gly Ala
 65 70 75 80
 Glu Val Asn Lys Pro Tyr Leu Thr Arg Ile Cys Asp Gln Leu Cys Ile
 85 90 95
 Pro Phe Arg Thr Ile Pro Ser Pro Tyr Ala Pro Glu Thr Pro Glu Cys
 100 105 110
 Tyr Pro Cys Ser Gln Ala Arg Arg Arg Leu Leu Phe Gln Ala Ala Lys
 115 120 125
 Glu Ile Gly Ala Ser Ala Ile Ala Phe Gly His His Arg Asp Asp Leu
 130 135 140
 Val Gln Thr Ala Leu Leu Asn Leu Leu His Lys Ala Glu Phe Ala Gly
 145 150 155 160
 Met Leu Pro Val Leu Asp Met Val His Phe Gly Val Thr Ile Leu Arg
 165 170 175
 Pro Leu Ile Phe Thr Pro Glu Phe Trp Ile Arg Lys Phe Ala Lys Glu
 180 185 190
 Asn Ala Ser Gln Glu Ser Leu Ala Val Val Pro Trp Phe His
 195 200 205

<210>274

<211>281

<212>PRT

<213>Chlamydia pneumoniae

<400>274

Leu Val Leu Met Asn Arg Leu Lys Ile Ile Leu Thr A Asp Asp
 1 5 10 15
 Gly Ile Thr Ala Lys Gly Met Ser Cys Leu Val Ser Ala Leu Leu Glu
 20 25 30
 Ala Asn Ile Gly Asp Ile Tyr Ile Ala Ala Pro Gln Ala Glu Gln Ser
 35 40 45
 Gly Lys Ser Met Ala Ile Ser Leu Asn Gln Val Val Cys Ala Ser Pro
 50 55 60
 Tyr Ala Tyr Pro Gln Pro Val Lys Glu Ala Trp Ala Val Gly Gly Ser
 65 70 75 80
 Pro Thr Asp Cys Val Arg Leu Gly Leu Arg Thr Leu Phe Glu Ser Val
 85 90 95
 Ser Pro Asp Leu Val Ile Ser Gly Ile Asn Cys Gly Asn Asn Ile Cys
 100 105 110
 Lys Asn Ala Trp Tyr Ser Gly Thr Ile Gly Ala Ala Lys Gln Ala Leu
 115 120 125
 Val Asp Gly Ile Pro Ser Met Ala Leu Ser Gln Asp Asn His Ile Ser
 130 135 140
 Phe Phe Gln Gln Asp Lys Ala Pro Glu Ile Leu Lys Ala Leu Val Ile
 145 150 155 160
 Tyr Leu Leu Ser Gln Pro Phe Pro Cys Leu Thr Gly Leu Asn Ile Asn
 165 170 175
 Phe Pro Thr Ser Pro Gly Gly Ser Ser Trp Glu Gly Met Arg Leu Val
 180 185 190
 Pro Pro Gly Asp Glu Phe Phe Tyr Glu Glu Pro Gln Tyr Leu Gly Ser
 195 200 205
 Val Asn Lys Asn Gln Tyr Tyr Val Gly Lys Ile Ser Gly Val Arg Ile
 210 215 220
 Gly Glu His Pro Ser Glu Glu Leu Ala Cys Met Leu Glu Asn His Ile
 225 230 235 240
 Ser Val Ser Pro Ile Phe Ser Gln Asn Ser Pro Ile Gly Leu Met Thr
 245 250 255
 Leu Glu Glu Phe Gln Lys Thr Gln Glu Asn Phe Asn Ala Ser Leu Leu
 260 265 270
 Ser Ser Glu Leu Thr Thr Lys Ile Phe
 275 280

<210>275

<211>313

<212>PRT

<213>Chlamydia pneumoniae

<400>275

Leu Arg Val Arg Pro Pro Ser Leu Ala Lys Tyr Ala Phe Arg Gly Phe
 1 5 10 15
 Arg Met Ser His Gly Pro Arg Pro Thr Lys Phe Ser Phe Pro Leu Tyr
 20 25 30
 Phe Ser Lys Thr Leu Ser Trp Phe Ile Leu Gly Gly Phe Leu Ala Ala
 35 40 45
 Cys Gly Val Gln Met Val Leu Val Pro Asn Glu Leu Ile Asp Gly Gly
 50 55 60
 Ile Val Gly Leu Ser Ile Ile Ala Ser His Phe Leu Gly His Lys Ala
 65 70 75 80
 Leu Pro Phe Cys Leu Val Leu Phe Asn Leu Pro Phe Val Phe Leu Ala
 85 90 95
 Phe Lys Gln Ile Gly Lys Tyr Phe Val Ile Gln Met Leu Thr Ala Val
 100 105 110
 Ile Ile Phe Ser Cys Ser Leu Trp Leu Ile Asp Gln Leu Pro Ser Trp
 115 120 125
 Leu Gly Met Ser Pro Phe Val Phe Lys Gly Ser Glu Met Glu Thr Val
 130 135 140
 Val Leu Gly Gly Ala Ile Ile Gly Val Gly Cys Gly Leu Ile Ile Arg
 145 150 155 160
 His Gly Gly Ser Thr Asp Gly Thr Glu Ile Leu Gly Ile Ile Ile Asn
 165 170 175
 Lys Lys Lys Gly Tyr Thr Val Gly Gln Ile Ile Leu Phe Val Asn Phe

180 185 190
 Phe Ile Phe Ala Leu Ser Gly Ile Val Tyr Lys Asn Trp His Thr Ala
 195 200 205
 Phe Val Ser Phe Leu Thr Tyr Gly Ile Ala Thr Lys Val Met Asp Met
 210 215 220
 Val Ile Leu Gly Leu Glu Asp Thr Lys Ser Val Thr Ile Ile Thr Ser
 225 230 235 240
 Ser Pro Arg Lys Leu Gly His Ile Leu Met Glu Thr Leu Gly Ile Gly
 245 250 255
 Leu Thr Tyr Ile His Ala Glu Gly Gly Tyr Ser Gly Glu Pro Arg Asn
 260 265 270
 Leu Leu Tyr Val Val Val Glu Arg Leu Gln Leu Ser Gln Leu Lys Glu
 275 280 285
 Ile Val His Arg Glu Asp Pro Ser Ala Phe Ile Ala Ile Glu Asn Leu
 290 295 300
 His Glu Val Ile Asn Gly Arg Arg Thr
 305 310

<210>276

<211>192

<212>PRT

<213>Chlamydia pneumoniae

<400>276

Met Lys Arg Tyr Val Val Gly Ile Ser Gly Ala Ser Gly Val Ile Leu
 1 5 10 15
 Ala Val Lys Leu Ile Lys Glu Leu Val Asn Ala Lys His Gln Val Glu
 20 25 30
 Val Ile Ile Ser Pro Ser Gly Arg Lys Thr Leu Tyr Tyr Glu Leu Gly
 35 40 45
 Cys Gln Ser Phe Asp Ala Leu Phe Ser Glu Glu Asn Leu Glu Tyr Ile
 50 55 60
 His Thr His Ser Ile Gln Ala Ile Glu Ser Ser Leu Ala Ser Gly Ser
 65 70 75 80
 Cys Pro Val Glu Ala Thr Ile Ile Ile Pro Cys Ser Met Thr Thr Val
 85 90 95
 Ala Ala Ile Ser Ile Gly Leu Ala Asp Asn Leu Leu Arg Arg Val Ala
 100 105 110
 Asp Val Ala Leu Lys Glu Arg Arg Pro Leu Ile Leu Val Pro Arg Glu
 115 120 125
 Thr Pro Leu His Thr Ile His Leu Glu Asn Leu Leu Lys Leu Ser Lys
 130 135 140
 Ser Gly Ala Thr Ile Phe Pro Pro Met Pro Met Trp Tyr Phe Lys Pro
 145 150 155 160
 Gln Ser Val Glu Asp Leu Glu Asn Ala Leu Val Gly Lys Ile Leu Ala
 165 170 175
 Tyr Leu Asn Ile Pro Ser Asp Leu Thr Lys Gln Trp Ser Asn Pro Glu
 180 185 190

<210>277

<211>296

<212>PRT

<213>Chlamydia pneumoniae

<400>277

Val Arg Leu Asn Tyr Phe Leu Asn Leu Val Asn Phe Lys Tyr Ser Ile
 1 5 10 15
 Phe Ser Ile Leu Phe Leu Ser Ala Ser Thr Val Phe Ala Leu Ser Ile
 20 25 30
 Asn Glu Ile Ser Gln Asn Leu Ser Phe Lys Glu Gly Phe Lys Ile Ser
 35 40 45
 Val Phe Gly Ala Ile Ala Phe Val Phe Ala Arg Thr Thr Gly Ile Val
 50 55 60
 Val Asn Gln Cys Ile Asp Arg Phe Ile Asp Lys Lys Asn Thr Arg Thr
 65 70 75 80
 Ser Lys Arg Val Leu Pro Ala Asn Leu Val Ser Leu Asn Phe Ala Trp
 85 90 95
 Val Leu Ser Leu Phe Cys Ser Phe Leu Phe Leu Phe Leu Cys Lys Ile

100 105
 Leu Arg Ile Phe Ser Leu Gly Ile Ala Ser Leu Thr Leu Met Ile Val
 115 120 125
 Tyr Pro Tyr Met Lys Arg Val Thr Phe Phe Cys His Trp Gly Leu Gly
 130 135 140
 Leu Val Tyr Thr Val Ala Ile Leu Met Asn Phe Cys Ala Phe Ala Glu
 145 150 155 160
 Ser Gly Leu Ser Met Arg Leu Cys Phe Leu Ala Leu Leu Trp Gly Gly
 165 170 175
 Ser Val Gly Met Val Ile Ala Ala Asn Asp Ile Ile Tyr Ala Ile Glu
 180 185 190
 Asp Thr Glu Phe Asp Arg Glu Glu Gly Leu Arg Ser Val Pro Ala His
 195 200 205
 Tyr Gly Glu Lys Lys Ala Val Glu Ile Ala Lys Val Asn Leu Trp Val
 210 215 220
 Ser Tyr Leu Ala Tyr Ile Phe Ser Gly Phe Val Gly Ser Leu Asp Lys
 225 230 235 240
 Glu Phe Tyr Phe Thr Ala Ile Ile Pro Leu Val Val Ile Leu Lys Val
 245 250 255
 Val Arg Met Tyr Ser Asn Tyr Ser Lys Lys Asp Gln Glu Gly Glu Ser
 260 265 270
 Gln Ile Leu Phe Ser Glu Tyr Cys Asp Cys Ser Ile Val Ser Cys Lys
 275 280 285
 Tyr Asp Phe Val Leu Glu Phe Glu
 290 295

<210>278

<211>232

<212>PRT

<213>Chlamydia pneumoniae

<400>278

Ile Met Ala Leu Asp Glu Ile Asn Asn Gln Asn Asn Pro Ser Gln Gln
 1 5 10 15
 Ile Ala Ser Ser Thr Ser Gln Thr Ser Lys Ile Asn Gln Asp Arg Lys
 20 25 30
 Thr Phe Ala Cys Thr Val Thr Leu Val Val Ala Thr Leu Met Ile
 35 40 45
 Leu Ser Gly Ile Val Leu Leu Phe Thr Ile Gly Ser Leu Gly Leu Ser
 50 55 60
 Val Pro Leu Ser Gly Ile Leu Gly Thr Phe Ala Val Thr Val Gly Ala
 65 70 75 80
 Val Leu Phe Ile Thr Gly Leu Thr Ile Leu Val Arg Lys Ser Leu Gly
 85 90 95
 Ile Glu Gln Lys Asn Glu Asp Leu Asn Phe Leu Lys Ile Lys Thr Pro
 100 105 110
 Thr Pro Pro Ala Arg Pro Leu Met Ser Lys Phe Ser Val Thr Cys Ser
 115 120 125
 Thr Thr Ser Ile Val Leu Gly Met Ala Leu Leu Ile Gly Ala Val Val
 130 135 140
 Ser Val Phe Phe Leu Thr Gly Tyr Leu Gln Leu Gly Leu Cys Ala Gly
 145 150 155 160
 Leu Val Gly Leu Gly Thr Ala Leu Phe Val Ala Gly Leu Ala Arg Met
 165 170 175
 Ser Pro Arg Ser Leu Ala Asp Gln Glu Gly Ser Gly Ser Ala Asp Ser
 180 185 190
 Gln Ser Asn Ile Val Gly Ile Gly Glu Pro Lys Ala Ala Gln Glu Gln
 195 200 205
 Lys Trp Tyr Lys Met Ala Val Val Arg Gly Glu Asp Gly Ile Pro Thr
 210 215 220
 Ala Ile Arg Leu Thr Pro Glu Lys
 225 230

<210>279

<211>263

<212>PRT

<213>Chlamydia pneumoniae

<400>279

Val Ser Ile Met Ser Leu Asn Lys Thr Asn Ala Leu Leu Asn Gln Pro
 1 5 10 15
 Glu Pro Ala Val Cys Leu Asn Ala Trp Asp Pro Lys Tyr Ile Asn Gln
 20 25 30
 Asp Arg Lys Thr Phe Ala Cys Thr Val Thr Leu Leu Val Ile Ala Thr
 35 40 45
 Leu Met Ile Leu Thr Thr Gly Val Ile Val Leu Leu Ala Met Gly Ser
 50 55 60
 Pro Gly Leu Ser Val Leu Val Ser Thr Ile Ile Gly Thr Ser Val Thr
 65 70 75 80
 Thr Leu Gly Thr Ala Leu Phe Ile Ile Gly Leu Val Lys Leu Ile Lys
 85 90 95
 Lys Ser Leu Ala Trp Ile Gln Tyr Gln Lys Tyr Phe Gln Glu Val Val
 100 105 110
 Lys Gln Lys Tyr Glu Pro Phe Ser Ile Pro Lys Asn Asp Asn Val His
 115 120 125
 Lys Leu Thr Ser Cys Leu Pro Ser Pro Leu Asp Ile Glu Ser Pro Ser
 130 135 140
 Pro Glu Ala Ser Thr Pro Val Ser Lys Leu Arg Ile Ala Cys Ser Gly
 145 150 155 160
 Val Ala Ile Val Leu Gly Val Thr Leu Leu Ile Gly Ala Val Val Ser
 165 170 175
 Val Phe Phe Cys Thr Gly Tyr Leu Gln Leu Ala Leu Cys Val Gly Phe
 180 185 190
 Ala Cys Leu Gly Thr Ala Leu Phe Val Gly Gly Leu Ala Gly Leu Arg
 195 200 205
 Thr His Ser Leu Ile Ala Gln Gly Ile Met Tyr Leu Tyr Leu Thr Tyr
 210 215 220
 Tyr Leu Ser Ser Ala Leu Glu Glu Arg Asn Glu Thr Val Lys Asp Gln
 225 230 235 240
 Arg Asn Glu Ile Asn Thr Tyr Leu Thr Glu Glu Cys Arg Gln Gln Lys
 245 250 255
 Arg Glu Lys Ala Leu Leu Glu
 260

<210>280

<211>115

<212>PRT

<213>Chlamydia pneumoniae

<400>280

Asp Pro Cys Ser Ser Ser Trp Leu Phe Ser Ser Val Ser Gly Ser Arg
 1 5 10 15
 Ser Gly Ala Gly Arg Asp Val Gly Leu Asp Pro Glu Val Pro Gly Leu
 20 25 30
 Leu Ala Leu Phe Cys Ser Leu Gly Cys Pro Arg Arg Gly Leu Arg Ser
 35 40 45
 Ser Ile Pro Phe Ser Thr Phe Gly Val Asp Val Pro Gly Gly Leu Ala
 50 55 60
 Cys Ala Phe Ser Gly Ser Val Phe Gly Arg Thr Asn Gly Ser Tyr Ala
 65 70 75 80
 Asn Ile Asn Ser Ser Ser Glu Gly Ile Gly Asp Lys Gly Gly Val Gly
 85 90 95
 Phe Phe Gln Phe Gly Thr Lys Asp Phe Ile His Ser Gln Val Asp Val
 100 105 110
 Leu Leu Leu
 115

<210>281

<211>331

<212>PRT

<213>Chlamydia pneumoniae

<400>281

Val Ala Phe Arg Cys Val Met Thr Ile Asp Met His Cys Asp Leu Leu
 1 5 10 15
 Ser His Pro His Phe Cys Arg Lys Asp Pro Ala Val Arg Cys Ser Pro

20 25
 Glu Gln Leu Leu Ser Gly Val Arg Gln Gln Val Cys Ala Ile Phe
 35 40 45
 Val Pro His Ser Arg Gly Glu Pro Asn Cys Asp Lys Gln Asn Ser Leu
 50 55 60
 Phe Phe Ser Leu Pro Asn Gln Tyr Pro Asp Ile Gly Leu Leu Ser Tyr
 65 70 75 80
 Glu Glu Glu Glu Asn Gly Ser Ser Ser Gln Lys Lys Ser Leu Ser Leu
 85 90 95
 Ile Arg Ser Ile Glu Asn Ala Ser Ala Leu Gly Asp Asp Thr Ala Pro
 100 105 110
 Leu Gly Thr Leu Leu Ala Lys Leu Ile His Leu Thr Lys Gln Gly Pro
 115 120 125
 Leu Ala Tyr Leu Gly Ile Val Trp Lys Gly Asp Asn Arg Phe Gly Gly
 130 135 140
 Gly Thr Glu Ala Pro Lys Arg Leu Ser Asn Asp Gly Lys Val Leu Leu
 145 150 155 160
 Asp Ile Met Tyr Glu Leu Gly Val Pro Ile Asp Leu Ser His Cys Ser
 165 170 175
 Asp Lys Leu Ala Glu Asp Ile Leu Asp Tyr Thr Ala Asp Lys Leu Pro
 180 185 190
 Asn Leu Ala Val Ile Ala Ser His Ser Asn Phe Arg Ser Val Leu Asp
 195 200 205
 His Arg Arg Asn Leu Val Asp Ala His Ala Lys Glu Ile Val Arg Arg
 210 215 220
 Lys Gly Val Ile Gly Leu Asn Leu Val Arg Ser Tyr Val Gly Asp Ser
 225 230 235 240
 Leu Gly Asp Leu Glu Lys His Val Leu His Ala Glu Asn Leu Gly Ile
 245 250 255
 Leu Ser Ser Ile Val Leu Gly Ser Asp Phe Phe Tyr Ala Asn Glu Asp
 260 265 270
 Glu Asn Phe Phe Asn Glu Cys Ser Ser Ala Glu Ala His Pro Val
 275 280 285
 Leu Asn Gln Leu Ile His Arg Ile Phe Ser Lys Gly Lys Ala Glu Ser
 290 295 300
 Ile Leu Ser Ser Arg Ala Glu Lys Phe Leu Lys Gln Val Ile Val Glu
 305 310 315 320
 Gln Val Asn Pro Lys Ile Thr Asp Val Lys Leu
 325 330

<210>282

<211>218

<212>PRT

<213>Chlamydia pneumoniae

<400>282

Arg Ile Glu Asn Ile Ser Gly Tyr Pro Leu Ser Pro Thr Ala Lys Lys
 1 5 10 15
 Leu Ala Gln Leu Phe Pro Gly Ala Ile Thr Leu Val Val Lys His Arg
 20 25 30
 Asn Pro Arg Phe Pro Lys Glu Thr Leu Ala Phe Arg Ile Val Asp His
 35 40 45
 Ser Val Val Arg Glu Ile Val Asp His Cys Gly Thr Leu Ile Gly Thr
 50 55 60
 Ser Ala Asn Leu Ser Glu Phe Pro Ser Ala Leu Thr Ala Gln Glu Ile
 65 70 75 80
 Phe Ala Asp Phe Ala Asp His Asp Leu Cys Ile Phe Asp Gly Pro Cys
 85 90 95
 Ser His Gly Leu Glu Ser Thr Val Val Ala Ser Asp Pro Leu Tyr Ile
 100 105 110
 Tyr Arg Glu Gly Leu Ile Ser Arg Ser Val Ile Glu Asn Ile Ala Gly
 115 120 125
 Thr Glu Ala Lys Ile Phe His Arg Thr Ser His Ala Phe Ser Lys His
 130 135 140
 Ile Lys Ile Tyr Thr Val Lys Asn Gln Glu Gln Leu Val Ser Phe Leu
 145 150 155 160

Ser Gly Ser Leu Asn Phe Lys Gly Val Val Cys Glu His Pro Lys Pro
 16 170 175
 Lys Asn Phe Tyr Tyr Arg Leu Arg Glu Ala Leu Lys Lys Lys Thr Pro
 180 185 190
 Ser Ile Val Phe Ile Tyr Asp Ile Asn Thr Ser Asp Tyr Pro Glu Leu
 195 200 205
 Phe Pro Phe Leu Ser Pro Tyr Tyr Ile Glu
 210 215

<210>283

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>283

Ser Ile Phe Gly Val Ile Val Pro Asp Lys Lys Ala Gln Ile Thr Phe
 1 5 10 15
 Ser Leu Pro Glu Val Met Ser Ala Ile His Gln Gly Lys Ile Val Ala
 20 25 30
 Leu Pro Thr Asp Thr Val Tyr Gly Phe Val Leu Ser Leu Tyr Ala Ser
 35 40 45
 Glu Ala Glu Glu Arg Leu Tyr Ala Leu Lys Asp Arg Glu Pro Ser Lys
 50 55 60
 Ala Phe Ala Leu Tyr Val Asn Ser Ile Glu Glu Ser Lys Thr Phe Leu
 65 70 75 80
 Val Ile Pro Tyr Leu Leu Gln Leu Arg Asn
 85 90

<210>284

<211>243

<212>PRT

<213>Chlamydia pneumoniae

<400>284

Met Thr Asp Tyr Ser Phe Phe Arg Arg Lys Ile Gly Asn Ile Glu Ala
 1 5 10 15
 Ile Glu Cys Pro Gly Asn Pro Gln Asp Pro Ile Ile Ile Leu Cys His
 20 25 30
 Gly Tyr Gly Ser Leu Ala Asp Asn Leu Thr Phe Phe Pro Ser Ile Cys
 35 40 45
 Ser Phe Ser Lys Leu Arg Pro Thr Trp Ile Phe Pro Asn Gly Ile Leu
 50 55 60
 Pro Leu Glu Asn Asp Phe Arg Gly Ser Arg Ala Cys Phe Pro Leu Asn
 65 70 75 80
 Val Leu Leu Leu Gln Glu Leu Ser Arg Leu Tyr Ala Asn Gly Val Gly
 85 90 95
 Asn Leu Gln Glu Lys Tyr Asp Glu Leu Phe Asp Val Asp Leu Glu Thr
 100 105 110
 Pro Lys Glu Ala Leu Glu Glu Leu Ile Leu Asn Leu Asn Arg Pro Tyr
 115 120 125
 Asn Glu Ile Ile Ile Gly Gly Phe Ser Gln Gly Ala Ile Leu Ala Thr
 130 135 140
 His Leu Val Leu Thr Ser Gln Asn Pro Tyr Ala Gly Ala Leu Ile Phe
 145 150 155 160
 Ala Gly Ala Arg Leu Phe Asn Gln Gly Trp Glu Glu Gly Leu Lys Gln
 165 170 175
 Cys Ala Gln Val Pro Phe Leu Gln Ser His Gly Tyr Glu Asp Glu Ile
 180 185 190
 Leu Pro Tyr His Leu Gly Ala His Leu Asn Asp Leu Leu Leu Thr Lys
 195 200 205
 Leu Asn Gly Gln Phe Val Ser Phe His Gly Gly His Glu Ile Pro Ser
 210 215 220
 Val Val Phe Gln Lys Met Gln Val Thr Val Pro Asn Trp Ile Asp Pro
 225 230 235 240
 Ala Arg Gly

<210>285

<211>274

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<212>PRT

<213>Chlamydia pneumoniae

<400>285

Phe Asn Arg Gln Ser Asp Ala Thr Tyr Ala Thr Trp Val Met His Leu
 1 5 10 15
 Glu Glu Glu Asn Gln Gly Trp Glu Ala Leu Leu Arg Lys Val Tyr His
 20 25 30
 Gln Glu Val Pro Pro Ala Ile Leu Leu His Gly Phe Thr Leu Pro Val
 35 40 45
 Leu Gln Asp Lys Ala Glu Gln Leu Ala Ser Glu Ile Leu Leu Ser Ser
 50 55 60
 Ser Pro Gly Ser Glu His Lys Val Ser Gln Lys Ile His Pro Asp Ile
 65 70 75 80
 Tyr Gln Phe Phe Pro Glu Gly Lys Gly Arg Leu His Ser Ile Asp Leu
 85 90 95
 Pro Arg Gly Ile Lys Lys Gln Ile Tyr Ile Ser Pro Phe Glu Ala Asn
 100 105 110
 Tyr Lys Ile Tyr Ile Ile His Glu Ala Asp Arg Met Thr Leu Ala Ala
 115 120 125
 Ile Ser Ala Phe Leu Lys Val Phe Glu Glu Pro Pro Lys His Ala Val
 130 135 140
 Ile Ile Leu Thr Thr Ala Lys Val Gln Arg Leu Pro Lys Thr Ile Ile
 145 150 155 160
 Ser Arg Ser Leu Ser Ile Phe Ile Glu Arg Gly Glu Lys Ile Leu Cys
 165 170 175
 Ser Lys Glu Thr Phe Ser Tyr Leu Phe Arg Tyr Ala Gln Cys Glu Ile
 180 185 190
 Pro Val Thr Glu Val Ser Gln Ile Ile Lys Glu Ser Ser Glu Thr Asp
 195 200 205
 Lys Gln Val Leu Arg Asp Lys Val Gln Arg Phe Met Glu Val Leu Leu
 210 215 220
 Glu Leu Tyr Arg Asp Arg Tyr Thr Leu Asn Leu Gly Leu Lys Ala Ser
 225 230 235 240
 Ala Leu Asn Tyr Pro Glu His Val Lys Glu Ile Leu Gln Leu Pro Leu
 245 250 255
 Leu Pro Leu Asp Lys Val Leu Leu Ile Val Glu Ser Ala Trp Ser Val
 260 265 270
 Ile Glu

<210>286

<211>209

<212>PRT

<213>Chlamydia pneumoniae

<400>286

Gly Ser Ile Val Phe Ile Val Ile Glu Gly Gly Glu Gly Ser Gly Lys
 1 5 10 15
 Ser Ser Leu Ala Lys Ala Leu Gly Asp Gln Leu Val Ala Gln Asp Arg
 20 25 30
 Lys Val Leu Leu Thr Arg Glu Pro Gly Gly Cys Leu Ile Gly Glu Arg
 35 40 45
 Leu Arg Asp Leu Ile Leu Glu Pro Pro His Leu Glu Leu Ser Arg Cys
 50 55 60
 Cys Glu Leu Phe Leu Phe Leu Gly Ser Arg Ala Gln His Ile Gln Glu
 65 70 75 80
 Val Ile Ile Pro Ala Leu Arg Asp Gly Tyr Ile Val Ile Cys Glu Arg
 85 90 95
 Phe His Asp Ser Thr Ile Val Tyr Gln Gly Ile Ala Glu Gly Leu Gly
 100 105 110
 Ala Asp Phe Val Ala Asp Leu Cys Ser Lys Val Val Gly Pro Thr Pro
 115 120 125
 Phe Leu Pro Asn Phe Val Leu Leu Asp Ile Pro Ala Asp Ile Gly
 130 135 140
 Leu Gln Arg Lys His Arg Gln Lys Val Phe Asp Lys Phe Glu Lys Lys
 145 150 155 160

Pro Leu Ser Tyr H Asn Arg Ile Arg Glu Gly Phe I er Leu Ala
 1 170 175
 Ser Ala Asp Pro Ser Arg Tyr Leu Val Leu Asp Ala Arg Glu Ser Leu
 180 185 190
 Ala Ser Leu Ile Asp Lys Val Met Leu His Thr Gln Leu Gly Leu Cys
 195 200 205
 Thr

<210>287

<211>834

<212>PRT

<213>Chlamydia pneumoniae

<400>287

Met Phe Asn Lys Asp Glu Ile Ile Val Pro Lys Asn Leu Glu Glu Glu
 1 5 10 15
 Met Lys Glu Ser Tyr Leu Arg Tyr Ser Met Ser Val Ile Ile Ser Arg
 20 25 30
 Ala Leu Pro Asp Ile Arg Asp Gly Leu Lys Pro Ser Gln Arg Arg Val
 35 40 45
 Leu Tyr Ala Met Lys Gln Leu Ser Leu Ser Pro Gly Ala Lys His Arg
 50 55 60
 Lys Cys Ala Lys Ile Cys Gly Asp Thr Ser Gly Asp Tyr His Pro His
 65 70 75 80
 Gly Glu Ser Val Ile Tyr Pro Thr Leu Val Arg Met Ala Gln Asn Trp
 85 90 95
 Ala Met Arg Tyr Pro Leu Val Asp Gly Gln Gly Asn Phe Gly Ser Ile
 100 105 110
 Asp Gly Asp Pro Pro Ala Ala Met Arg Tyr Thr Glu Ala Arg Leu Thr
 115 120 125
 His Ser Ala Met Tyr Leu Met Glu Asp Leu Asp Lys Asp Thr Val Asp
 130 135 140
 Ile Val Pro Asn Tyr Asp Glu Thr Lys His Glu Pro Val Val Phe Pro
 145 150 155 160
 Ser Lys Phe Pro Asn Leu Leu Cys Asn Gly Ser Ser Gly Ile Ala Val
 165 170 175
 Gly Met Ala Thr Asn Ile Pro Pro His Asn Leu Gly Glu Leu Ile Glu
 180 185 190
 Ala Thr Leu Leu Leu Leu Ala Asn Pro Gln Ala Ser Val Asp Glu Ile
 195 200 205
 Leu Gln Val Met Pro Gly Pro Asp Phe Pro Thr Gly Gly Ile Ile Cys
 210 215 220
 Gly Ser Glu Gly Ile Arg Ser Thr Tyr Thr Thr Gly Arg Gly Lys Ile
 225 230 235 240
 Lys Val Arg Ala Arg Leu His Val Glu Glu Asn Glu Asp Lys His Arg
 245 250 255
 Glu Ser Ile Ile Ile Thr Glu Met Pro Tyr Asn Val Asn Lys Ser Arg
 260 265 270
 Leu Ile Glu Gln Ile Ala Asn Leu Val Asn Glu Lys Thr Leu Ala Gly
 275 280 285
 Ile Ser Asp Val Arg Asp Glu Ser Asp Lys Asp Gly Ile Arg Val Val
 290 295 300
 Leu Glu Ile Lys Lys Gly Glu Ser Ser Glu Ile Ile Asn Arg Leu
 305 310 315 320
 Tyr Lys Phe Thr Asp Val Gln Val Thr Phe Gly Ala Asn Met Leu Ala
 325 330 335
 Leu Asp Lys Asn Leu Pro Arg Thr Met Ser Ile His Arg Met Ile Ser
 340 345 350
 Ala Trp Ile Arg His Arg Lys Glu Val Ile Arg Arg Arg Thr Arg Tyr
 355 360 365
 Glu Leu Asn Lys Ala Glu Thr Arg Ala His Val Leu Glu Gly Tyr Leu
 370 375 380
 Lys Ala Leu Ser Cys Leu Asp Ala Leu Val Lys Thr Ile Arg Glu Ser
 385 390 395 400
 Gly Asn Lys Glu His Ala Lys Glu Arg Ile Ile Glu Ser Phe Gly Phe

405 410 415
 Thr Glu Pro Gln Ala Leu Ala Ile Leu Glu Leu Arg Leu Tyr Gln Leu
 420 425 430
 Thr Gly Leu Glu Ala Glu Lys Ile Gln Lys Glu Tyr Glu Glu Leu Leu
 435 440 445
 Asn Lys Ile Ala Tyr Tyr Lys Gln Val Leu Ser Asp Glu Gly Leu Val
 450 455 460
 Lys Asp Ile Ile Arg Asn Glu Leu Gln Asp Leu Leu Lys His His Lys
 465 470 475 480
 Val Ala Arg Arg Thr Thr Ile Glu Phe Asp Ala Asp Asp Ile Arg Asp
 485 490 495
 Ile Glu Asp Ile Ile Thr Asn Glu Ser Val Ile Ile Thr Ile Ser Gly
 500 505 510
 Asp Asp Tyr Val Lys Arg Met Pro Val Lys Val Phe Lys Glu Gln Arg
 515 520 525
 Arg Gly Gly His Gly Val Thr Gly Phe Asp Met Lys Lys Gly Ala Gly
 530 535 540
 Phe Leu Lys Ala Val Tyr Ser Ala Phe Thr Lys Asp Tyr Leu Leu Ile
 545 550 555 560
 Phe Thr Asn Phe Gly Gln Cys Tyr Trp Leu Lys Val Trp Gln Leu Pro
 565 570 575
 Glu Gly Glu Arg Arg Ala Lys Gly Lys Pro Ile Ile Asn Phe Leu Glu
 580 585 590
 Gly Ile Arg Pro Gly Glu Glu Leu Ala Ala Ile Leu Asn Ile Lys Asn
 595 600 605
 Phe Asp Asn Ala Gly Phe Leu Phe Leu Ala Thr Lys Arg Gly Val Val
 610 615 620
 Lys Lys Val Ser Leu Asp Ala Phe Ser Asn Pro Arg Lys Lys Gly Ile
 625 630 635 640
 Arg Ala Leu Glu Ile Asp Glu Gly Asp Glu Leu Ile Ala Ala Cys His
 645 650 655
 Ile Val Ser Asp Glu Glu Lys Val Met Leu Phe Thr His Leu Gly Met
 660 665 670
 Ala Val Arg Phe Pro His Glu Lys Val Arg Pro Met Gly Arg Thr Ala
 675 680 685
 Arg Gly Val Arg Gly Val Ser Leu Lys Asn Glu Glu Asp Lys Val Val
 690 695 700
 Ser Cys Gln Ile Val Thr Glu Asn Gln Ser Val Leu Ile Val Cys Asp
 705 710 715 720
 Gln Gly Phe Gly Lys Arg Ser Leu Val Glu Asp Phe Arg Glu Thr Asn
 725 730 735
 Arg Gly Gly Val Gly Val Arg Ser Ile Leu Ile Asn Glu Arg Asn Gly
 740 745 750
 Asn Val Leu Gly Ala Ile Pro Val Thr Asp His Asp Ser Ile Leu Leu
 755 760 765
 Met Ser Ser Gln Gly Gln Ala Ile Arg Ile Asn Met Gln Asp Val Arg
 770 775 780
 Val Met Gly Arg Ser Thr Gln Gly Val Arg Leu Val His Leu Lys Glu
 785 790 795 800
 Gly Asp Ala Leu Val Ser Met Glu Lys Leu Ser Ser Asn Glu Asn Asp
 805 810 815
 Asp Glu Val Leu Ser Gly Ser Glu Glu Cys Ser Asp Thr Val Ser
 820 825 830
 Leu Arg

<210>288

<211>789

<212>PRT

<213>Chlamydia pneumoniae

<400>288

Lys Gly Tyr Lys Leu Phe Val Ser Ala Pro Gly Cys Thr Leu Glu Ile
 1 5 10 15
 Arg Glu Ser Arg Val Phe Ile His Leu Val Tyr Glu Val Val Asp Asn
 20 25 30

Ser Ile Asp Glu A Met Ala Gly Tyr Cys Ser Arg I sp Val Arg
 35 40
 Ile Leu Glu Asp Gly Gly Ile Val Ile Val Asp Asn Gly Arg Gly Ile
 50 55 60
 Pro Ile Glu Val His Glu Arg Glu Ser Ala Lys Gln Gly Arg Glu Val
 65 70 75 80
 Ser Ala Leu Glu Val Val Leu Thr Val Leu His Ala Gly Gly Lys Phe
 85 90 95
 Asp Lys Asp Ser Tyr Lys Val Ser Gly Gly Leu His Gly Val Gly Val
 100 105 110
 Ser Cys Val Asn Ala Leu Ser Glu Lys Leu Val Ala Thr Val Phe Lys
 115 120 125
 Asp Lys Lys Cys Tyr Gln Met Glu Phe Ser Arg Gly Ile Pro Val Thr
 130 135 140
 Pro Leu Gln Tyr Val Ser Val Ser Asp Arg Gln Gly Thr Glu Ile Val
 145 150 155 160
 Phe Tyr Pro Asp Pro Lys Ile Phe Ser Thr Cys Thr Phe Asp Arg Ser
 165 170 175
 Ile Leu Met Lys Arg Leu Arg Glu Leu Ala Phe Leu Asn Arg Gly Ile
 180 185 190
 Thr Ile Val Phe Glu Asp Asp Arg Asp Val Ser Phe Asp Lys Val Thr
 195 200 205
 Phe Phe Tyr Glu Gly Gly Ile Gln Ser Phe Val Ser Tyr Leu Asn Gln
 210 215 220
 Asn Lys Glu Ser Leu Phe Ser Glu Pro Ile Tyr Ile Cys Gly Thr Arg
 225 230 235 240
 Val Gly Asp Asp Gly Glu Ile Glu Phe Glu Ala Ala Leu Gln Trp Asn
 245 250 255
 Ser Gly Tyr Ser Glu Leu Val Tyr Ser Tyr Ala Asn Asn Ile Pro Thr
 260 265 270
 Arg Gln Gly Gly Thr His Leu Thr Gly Phe Ser Thr Ala Leu Thr Arg
 275 280 285
 Val Ile Asn Thr Tyr Ile Lys Ala His Asn Leu Ala Lys Asn Asn Lys
 290 295 300
 Leu Ala Leu Thr Gly Glu Asp Ile Arg Glu Gly Leu Thr Ala Val Ile
 305 310 315 320
 Ser Val Lys Val Pro Asn Pro Gln Phe Glu Gly Gln Thr Lys Gln Lys
 325 330 335
 Leu Gly Asn Ser Asp Val Ser Ser Val Ala Gln Gln Val Val Gly Glu
 340 345 350
 Ala Leu Thr Ile Phe Phe Glu Glu Asn Pro Gln Ile Ala Arg Met Ile
 355 360 365
 Val Asp Lys Val Phe Val Ala Gln Ala Arg Glu Ala Ala Lys Lys
 370 375 380
 Ala Arg Glu Leu Thr Leu Arg Lys Ser Ala Leu Asp Ser Ala Arg Leu
 385 390 395 400
 Pro Gly Lys Leu Ile Asp Cys Leu Glu Lys Asp Pro Glu Lys Cys Glu
 405 410 415
 Met Tyr Ile Val Glu Gly Asp Ser Ala Gly Gly Ser Ala Lys Gln Gly
 420 425 430
 Arg Asp Arg Arg Phe Gln Ala Ile Leu Pro Ile Arg Gly Lys Ile Leu
 435 440 445
 Asn Val Glu Lys Ala Arg Leu Gln Lys Ile Phe Gln Asn Gln Glu Ile
 450 455 460
 Gly Thr Ile Ile Ala Ala Leu Gly Cys Gly Ile Gly Ala Asp Asn Phe
 465 470 475 480
 Asn Leu Ser Lys Leu Arg Tyr Arg Arg Ile Ile Ile Met Thr Asp Ala
 485 490 495
 Asp Val Asp Gly Ser His Ile Arg Thr Leu Leu Leu Thr Phe Phe Tyr
 500 505 510
 Arg His Met Thr Ala Leu Ile Glu Asn Glu Cys Val Tyr Ile Ala Gln
 515 520 525
 Pro Pro Leu Tyr Lys Val Ser Lys Lys Lys Asp Phe Arg Tyr Ile Leu
 530 535 540

Ser Glu Lys Glu Met Ser Tyr Leu Leu Met Leu Gly Asn Glu
 545 555 560
 Ser Ser Ile Leu Phe Lys Ser Thr Glu Arg Glu Leu Arg Gly Glu Ala
 565 570 575
 Leu Glu Ser Phe Ile Asn Val Ile Leu Asp Val Glu Ser Phe Ile Asn
 580 585 590
 Thr Leu Glu Lys Lys Ala Ile Pro Phe Ser Glu Phe Leu Glu Met Tyr
 595 600 605
 Lys Glu Gly Ile Gly Tyr Pro Leu Tyr Tyr Leu Ala Pro Ala Thr Gly
 610 615 620
 Met Gln Gly Gly Arg Tyr Leu Tyr Ser Asp Glu Glu Lys Glu Glu Ala
 625 630 635 640
 Leu Ala Gln Glu Glu Thr His Lys Phe Lys Ile Ile Glu Leu Tyr Lys
 645 650 655
 Val Ala Val Phe Val Asp Ile Gln Asn Gln Leu Lys Glu Tyr Gly Leu
 660 665 670
 Asp Ile Ser Ser Tyr Leu Ile Pro Gln Lys Asn Glu Ile Val Ile Gly
 675 680 685
 Asn Glu Asp Ser Pro Ser Cys Asn Tyr Ser Cys Tyr Thr Leu Glu Glu
 690 695 700
 Val Ile Asn Tyr Leu Lys Asn Leu Gly Arg Lys Gly Ile Glu Ile Gln
 705 710 715 720
 Arg Tyr Lys Gly Leu Gly Glu Met Asn Ala Asp Gln Leu Trp Asp Thr
 725 730 735
 Thr Met Asn Pro Glu Gln Arg Thr Leu Ile His Val Ser Leu Lys Asp
 740 745 750
 Ala Val Glu Ala Asp His Ile Phe Thr Met Leu Met Gly Glu Glu Val
 755 760 765
 Pro Pro Arg Arg Glu Phe Ile Glu Ser His Ala Leu Ser Ile Arg Ile
 770 775 780
 Asn Asn Leu Asp Ile
 785

<210>289

<211>116

<212>PRT

<213>Chlamydia pneumoniae

<400>289

Asp Met Phe Leu Lys Arg Lys Lys Arg Gly Gly Ser Gln Val Gln Asn
 1 5 10 15
 Lys Gly Thr Ala Ser Pro Ile Lys His Ala Lys His Tyr Leu His Asn
 20 25 30
 Tyr Leu Gln Glu Leu Gln Lys Ile Met Ala Ala Arg Pro His Asp Ala
 35 40 45
 Ile Asp Ala Trp Asn Gln Val Phe Arg Asp Lys Tyr Lys Gly Met Ser
 50 55 60
 Gln Ala Ile Gly Phe Arg Asp His Ile Leu Leu Val Lys Val Tyr Asn
 65 70 75 80
 Ser Ser Leu Tyr Ala Leu Leu Lys Gln Thr Pro Gln Asn Asp Leu Ile
 85 90 95
 Met Ser Leu Tyr Gln Val Ala Ser His Val Gln Ile Arg Glu Ile Gln
 100 105 110
 Phe Leu Leu Gly
 115

<210>290

<211>200

<212>PRT

<213>Chlamydia pneumoniae

<400>290

Asn Ile Ser Ile Phe Tyr Pro Lys Tyr Phe Ile Glu Gly Lys Glu Val
 1 5 10 15
 Leu Ile Lys Asn Leu Pro Pro Leu Ile Phe Tyr Gly Val Ile Leu Met
 20 25 30
 Ile Ile Asn Val Arg Ala Pro Ala Phe Gly Ile Thr Ser Val Gln Gln
 35 40 45

Phe Ser Thr Asn P Gln Ala Ala Ile Pro Ile Leu A le Val Ile
 50 55 60
 Gly Cys Ser Arg Ile Ser Ser Thr Tyr Ala Glu Asp Ile Glu Glu Val
 65 70 75 80
 Ala Gln Glu Lys Leu Glu Lys Ser Thr His Ser Lys Ser Ser Thr Ser
 85 90 95
 Val Asn Leu Trp Ala His Arg Val Arg Gly Val Val Glu Ile Leu Gly
 100 105 110
 Gly Gly Ile Val Ile Leu Ala Leu Glu Ile Thr Ala Leu Val Leu Gln
 115 120 125
 Val Ile Ile Lys Leu Ile Lys Cys Leu Ile Asp Val Leu Cys Val Cys
 130 135 140
 Leu Phe Gly Leu Gly Val Cys Val Val Ala Ile Ile Gly Ala Ile Ala
 145 150 155 160
 Phe Cys Val Val Val Val Val Lys Tyr Leu Gly Phe Cys Ser Gln Gly
 165 170 175
 Glu Glu Leu Glu Pro Ile Glu Val Lys Thr Leu Ile Ser Pro Asp Lys
 180 185 190
 Pro Tyr Pro Thr Val Val Tyr Val
 195 200

<210>291

<211>275

<212>PRT

<213>Chlamydia pneumoniae

<400>291

Arg Asp Ser Met Lys Lys Lys Leu Ser Leu Leu Val Gly Leu Ile Phe
 1 5 10 15
 Val Leu Ser Ser Cys His Lys Glu Asp Ala Gln Asn Lys Ile Arg Ile
 20 25 30
 Val Ala Ser Pro Thr Pro His Ala Glu Leu Leu Glu Ser Leu Gln Glu
 35 40 45
 Glu Ala Lys Asp Leu Gly Ile Lys Leu Lys Ile Leu Pro Val Asp Asp
 50 55 60
 Tyr Arg Ile Pro Asn Arg Leu Leu Leu Asp Lys Gln Val Asp Ala Asn
 65 70 75 80
 Tyr Phe Gln His Gln Ala Phe Leu Asp Asp Glu Cys Glu Arg Tyr Asp
 85 90 95
 Cys Lys Gly Glu Leu Val Val Ile Ala Lys Val His Leu Glu Pro Gln
 100 105 110
 Ala Ile Tyr Ser Lys Lys His Ser Ser Leu Glu Arg Leu Lys Ser Gln
 115 120 125
 Lys Lys Leu Thr Ile Ala Ile Pro Val Asp Arg Thr Asn Ala Gln Arg
 130 135 140
 Ala Leu His Leu Leu Glu Cys Gly Leu Ile Val Cys Lys Gly Pro
 145 150 155 160
 Ala Asn Leu Asn Met Thr Ala Lys Asp Val Cys Gly Lys Glu Asn Arg
 165 170 175
 Ser Ile Asn Ile Leu Glu Val Ser Ala Pro Leu Leu Val Gly Ser Leu
 180 185 190
 Pro Asp Val Asp Ala Ala Val Ile Pro Gly Asn Phe Ala Ile Ala Ala
 195 200 205
 Asn Leu Ser Pro Lys Lys Asp Ser Leu Cys Leu Glu Asp Leu Ser Val
 210 215 220
 Ser Lys Tyr Thr Asn Leu Val Val Ile Arg Ser Glu Asp Val Gly Ser
 225 230 235 240
 Pro Lys Met Ile Lys Leu Gln Lys Leu Phe Gln Ser Pro Ser Val Gln
 245 250 255
 His Phe Phe Asp Thr Lys Tyr His Gly Asn Ile Leu Thr Met Thr Gln
 260 265 270
 Asp Asn Gly
 275

<210>292

<211>221

<212>PRT

<213>Chlamydia pneumoniae

<400>292

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Met Gln Ser Asp Leu Ile Gln Ile Leu Leu Lys Glu Thr Val Asn Thr
 1          5          10          15
Leu Tyr Met Val Ser Thr Ala Phe Phe Phe Ser Cys Ala Ile Gly Gly
          20          25          30
Met Leu Gly Leu Gly Leu Phe Cys Thr Ser Pro Lys Ser Leu Asn Pro
          35          40          45
Lys Lys Ser Leu Tyr Ala Thr Ile Ser Met Ile Leu Ser Phe Leu Thr
          50          55          60
Ala Ile Pro Phe Ala Ile Leu Ile Val Ile Leu Phe Pro Ile Thr Arg
          65          70          75          80
Trp Ile Val Gly Thr Ser Leu Gly Pro Thr Ala Ser Ile Val Pro Leu
          85          90          95
Thr Ile Gly Ala Ile Pro Phe Val Val Thr Ile Val Val Asp Ala Phe
          100          105          110
Arg Asn Ser Ala Leu Asn Tyr Leu Glu Ser Ala Val Ala Leu Gly Ile
          115          120          125
Pro Lys Arg Asn Ile Leu Phe Gly Ile Leu Leu Pro Glu Ser Tyr Pro
          130          135          140
Gln Leu Ile Phe Ser Leu Lys Ser Leu Val Val His Leu Ile Ser Cys
          145          150          155          160
Ser Thr Leu Ala Gly Phe Val Gly Gly Gly Gly Leu Gly Gln Leu Leu
          165          170          175
Leu Gln Tyr Gly Tyr Tyr Arg Phe Glu Trp Ser Val Thr Thr Ser Val
          180          185          190
Leu Val Ile Thr Leu Val Leu Ile Glu Ser Val Arg Ile Leu Gly Asp
          195          200          205
Phe Trp Gly Arg Arg Val Leu Lys Tyr Arg Gly Ile Leu
          210          215          220

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<210>293

<211>341

<212>PRT

<213>Chlamydia pneumoniae

<400>293

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Val Ser Glu Gln His Ser Pro Ile Ile Ser Val Gln Asp Val Ser Lys
 1          5          10          15
Lys Leu Gly Asp His Ile Leu Leu Ser Lys Val Ser Phe Ser Val Tyr
          20          25          30
Pro Gly Glu Val Phe Gly Ile Val Gly His Ser Gly Ser Gly Lys Thr
          35          40          45
Thr Leu Leu Arg Cys Leu Asp Phe Leu Asp Met Pro Thr Ser Gly Ser
          50          55          60
Ile Ser Val Ala Gly Phe Asp Asn Ser Leu Pro Thr Gln Lys Phe Ser
          65          70          75          80
Arg Arg Asn Phe Ser Lys Lys Val Ala Tyr Ile Ser Gln Asn Tyr Gly
          85          90          95
Leu Phe Ser Ser Lys Thr Val Phe Glu Asn Ile Ala Tyr Pro Leu Arg
          100          105          110
Ile His His Ser Glu Met Ser Lys Ser Glu Val Glu Glu Gln Val Tyr
          115          120          125
Asp Thr Leu Asn Phe Leu Asn Leu Tyr His Arg His Asp Ala Tyr Pro
          130          135          140
Gly Asn Leu Ser Gly Gly Gln Lys Gln Glu Val Ala Ile Ala Arg Ala
          145          150          155          160
Ile Val Cys Gln Pro Glu Val Val Leu Cys Asp Glu Ile Thr Ser Ala
          165          170          175
Leu Asp Pro Lys Ser Thr Glu Asn Ile Ile Glu Arg Leu Leu Gln Leu
          180          185          190
Asn Gln Glu Arg Gly Ile Thr Leu Val Leu Val Ser His Glu Ile Asp
          195          200          205
Val Val Lys Lys Ile Cys Ser His Val Leu Val Met His Gln Gly Ala
          210          215          220
Val Glu Glu Leu Gly Thr Thr Glu Glu Leu Phe Leu Asn Ser Glu Asn

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<210>294
<211>357
<212>PRT
<213>Chlamydia pneumoniae
<400>294
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528

Asn Ile Thr Ile Ala

355

<210>295

<211>468

<212>PRT

<213>Chlamydia pneumoniae

<400>295

Met His Ser His Ser Lys Pro Thr Lys Pro Leu Gly Thr Phe Thr Val
 1 5 10 15
 Gly Met Leu Ser Leu Ala Val Val Ile Ser Leu Arg Asn Leu Pro Leu
 20 25 30
 Thr Ala Lys His Gly Leu Ser Thr Leu Phe Phe Tyr Gly Leu Ala Val
 35 40 45
 Ile Cys Phe Met Ile Pro Tyr Ala Leu Ile Ser Ala Glu Leu Ala Ser
 50 55 60
 Phe Lys Pro Gln Gly Ile Tyr Ile Trp Ala Arg Asp Ala Leu Gly Lys
 65 70 75 80
 Trp Trp Gly Phe Phe Ala Ile Trp Met Gln Trp Phe His Asn Met Thr
 85 90 95
 Trp Tyr Pro Ala Val Leu Ala Phe Ile Ala Ser Thr Ile Val Tyr Lys
 100 105 110
 Ile Asn Pro Glu Leu Ala His Asn Lys Val Tyr Ile Ala Thr Val Ile
 115 120 125
 Leu Ala Gly Phe Trp Ile Leu Thr Phe Phe Asn Phe Leu Gly Ile Thr
 130 135 140
 Ser Ser Ala Leu Phe Ser Ser Ile Cys Val Ile Ile Gly Thr Leu Ile
 145 150 155 160
 Pro Gly Val Ile Leu Val Ser Leu Ala Leu Phe Trp Ile Phe Ser Gly
 165 170 175
 Asn Pro Ile Ala Ile Ser Leu Ser Trp Gly Asn Leu Leu Pro Asn Phe
 180 185 190
 Ser Asn Val Ser Ser Leu Val Leu Leu Ala Gly Met Leu Leu Ala Leu
 195 200 205
 Cys Gly Leu Glu Ala Asn Ala Asn Leu Ala Ser Asp Met Val Asn Pro
 210 215 220
 Arg Lys Asn Tyr Pro Lys Ala Val Phe Ile Gly Ala Ile Ala Thr Leu
 225 230 235 240
 Thr Ile Leu Val Leu Gly Ser Leu Ser Ile Ala Ile Val Ile Pro Lys
 245 250 255
 Glu Glu Ile Ser Leu Val Ser Gly Leu Val Lys Thr Phe Thr Leu Phe
 260 265 270
 Phe Asp Lys Tyr Asn Leu Ser Trp Met Thr Gly Ile Val Val Val Met
 275 280 285
 Thr Ile Ala Gly Ser Leu Gly Glu Leu Asn Ala Trp Met Phe Ala Gly
 290 295 300
 Thr Lys Gly Leu Phe Ile Ser Thr Gln Asn Asp Cys Leu Pro Arg Leu
 305 310 315 320
 Phe Lys Lys Val Asn Ser Lys Asn Val Pro Thr Asn Leu Met Leu Phe
 325 330 335
 Gln Gly Ile Val Val Thr Ile Phe Thr Leu Leu Phe Leu Cys Leu Asp
 340 345 350
 Ser Ala Asp Leu Val Tyr Trp Ile Leu Thr Ala Leu Ser Val Gln Met
 355 360 365
 Tyr Leu Ala Met Tyr Ile Cys Leu Phe Leu Ala Gly Pro Ile Leu Arg
 370 375 380
 Ile Lys Glu Pro Arg Ala Gln Arg Leu Tyr Ser Val Pro Gly Lys Phe
 385 390 395 400
 Leu Gly Ile Cys Thr Met Ser Ile Leu Gly Ile Leu Ser Cys Ala Phe
 405 410 415
 Ala Leu Trp Val Ser Phe Leu Pro Pro Arg Glu Leu Ala Gln Ile Ser
 420 425 430
 Glu Gly Ser Lys Ile Gly Tyr Thr Thr Phe Leu Leu Leu Ala Phe Ser
 435 440 445
 Leu Asn Cys Leu Ile Pro Phe Gly Ile Tyr Phe Thr His Lys Arg Leu

450 455 460
 Ser Lys Lys Ser
 465
 <210>296
 <211>209
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>296
 Arg Gly Ala Lys Phe Cys Arg Thr Lys Lys Tyr Ile Thr Pro Phe Leu
 1 5 10 15
 His His Leu Phe Glu Gly Asp Glu Val Ala Leu Leu Asn Gln Leu Ser
 20 25 30
 Leu Arg Leu Asp Leu Ile Val Pro Asn Ala Leu Tyr Pro Glu Pro Asp
 35 40 45
 Pro Ser Cys Trp Gln Ser Ile Asn Ser Glu Asp Cys Ala Lys Asp Ala
 50 55 60
 Glu Asp Gln Gln Glu Asp Phe Asn Lys Thr Lys Glu Ala Cys Lys Glu
 65 70 75 80
 Gly Leu Lys Lys Leu Val Leu Pro Ala Leu Ser Ile Thr Ser Ile Pro
 85 90 95
 Gln Leu Leu Arg Ala Arg Arg Phe Lys Gln Gly Ala Glu Ile Leu Met
 100 105 110
 Ala Ile Asp Arg Lys Lys Met Lys Gln Asn Pro Phe Ile Phe Leu Glu
 115 120 125
 Ala Leu Leu Glu Ser Glu Glu Phe Ser Ile Ser Val Gly Lys Tyr Leu
 130 135 140
 Lys Leu Leu Met Pro Ile His Leu Trp Asp Lys Leu Leu His Ala Ile
 145 150 155 160
 Tyr Leu Gly Tyr Phe Gln Thr Gly Leu Ile Cys Gln Gly Glu Ile Glu
 165 170 175
 Thr Phe Cys Arg Arg Ala Asn Leu Asn Pro Glu Ala Phe Gln Ala Ala
 180 185 190
 Ile Gln Gln Gly Arg Leu Leu Ser Phe Leu Phe Pro Lys Met Leu Leu
 195 200 205
 Asp

<210>297
 <211>168
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>297
 Phe Leu Asp Met Asn Ile Pro Ala Pro Gln Val Pro Val Ile Asp Glu
 1 5 10 15
 Pro Val Val Asn Asn Thr Ser Ser Tyr Gly Leu Ser Leu Lys Ser Ser
 20 25 30
 Leu Arg Pro Ile Thr Tyr Leu Ile Leu Ala Ile Leu Ala Ile Ala Thr
 35 40 45
 Leu Met Ser Val Leu Tyr Phe Cys Gly Ile Ile Ser Val Gly Thr Phe
 50 55 60
 Val Leu Gly Met Leu Ile Pro Leu Ser Val Cys Ser Val Leu Cys Val
 65 70 75 80
 Ala Tyr Leu Phe Tyr Gln Gln Ser Ser Ile Glu Lys Thr Lys Val Phe
 85 90 95
 Ser Ile Thr Ser Pro Ser Val Phe Phe Ser Asp Glu Asp Leu Asn Leu
 100 105 110
 Leu Leu Gly Arg Glu Glu Asp Ser Val Ser Ala Ile Asp Glu Leu Leu
 115 120 125
 Lys Asn Phe Pro Ala Asp Asp Phe Arg Arg Pro Lys Met Leu Pro Tyr
 130 135 140
 Ser Asn Phe Leu Asp Glu Gln Gly Arg Pro Asn Glu Ser Arg Glu Glu
 145 150 155 160
 Asp Ser His Thr Ser Lys Ile Leu
 165
 <210>298

<211>517

<212>PRT

<213>Chlamydia pneumoniae

<400>298

Lys Glu Leu Phe Asn Leu Phe Phe Phe Thr Ala Asn Lys Glu Thr Thr
 1 5 10 15
 Ala Ser His Glu Leu Ile Tyr Arg Lys Asn Gln Ser Phe Ser Leu Ser
 20 25 30
 Pro Val Thr Ile Leu Cys Leu Leu Ala Ile Ser Val Leu Leu Leu Leu
 35 40 45
 Gly Val Val Phe Ala Leu Val Gly Cys His Val Leu Ala Ala Pro Leu
 50 55 60
 Gly Leu Leu Val Trp Gly Cys Ala Ala Ser Val Cys Ser Met Met Ala
 65 70 75 80
 Ile Val Ser Leu Met Cys Leu Tyr Lys Gly Gly Lys Pro Leu Ile Glu
 85 90 95
 Pro Ser Asn Glu Lys Ile Asp Pro Thr Lys Asp Leu Glu Ile Lys
 100 105 110
 Asp Pro Glu Ser Leu Lys Pro Val Pro Val Glu Gly Gln Ser Leu Pro
 115 120 125
 Lys Glu Arg Lys Thr Val Ser Phe Lys Ala Lys Ile Pro Ser Ile Val
 130 135 140
 Glu Asp Asp Phe Lys Pro Tyr Val Ile Gln Ser Thr Phe Tyr His Gln
 145 150 155 160
 Asn Lys Val Tyr Ser Lys Pro Ile Ala Glu Arg Met Gln Ser Leu Glu
 165 170 175
 Lys Glu Ile Thr Thr Leu Ile Val Asp Phe Pro Arg Ala Leu Glu Glu
 180 185 190
 Ser Ser Lys Ser Ser Gly Ser Leu Leu Arg Gly Val Ile Ser Glu Ile
 195 200 205
 Lys Asn Leu Phe Leu Pro Arg Phe Leu Ser Arg Lys Val Lys Tyr Ser
 210 215 220
 Leu Thr Ala Cys Leu Arg Arg Leu Gly Ser Ile Val Glu Glu Tyr Ala
 225 230 235 240
 Ser Ser Asp Leu Leu Ile Leu Leu Leu Thr Lys Pro Glu Pro Leu Asn
 245 250 255
 Met Val Thr Gln Gln Leu Ile Ala His Leu Asn Ser Leu Lys Thr Glu
 260 265 270
 Lys Arg Lys Leu Thr Pro His Met Gln Lys Leu Val Leu Ser Ile Asn
 275 280 285
 Phe Trp Phe Tyr Gly Trp Ser Leu Glu Glu Lys Cys Ile Glu Lys Ile
 290 295 300
 Val Ala Tyr Asp Pro Asn Leu Leu Thr Asp Glu Leu Lys Ala His Leu
 305 310 315 320
 Glu Ala Gly Asn Ile Val Gln Phe Leu Leu Ser Phe Gln Ser Ser Glu
 325 330 335
 Met Gln Arg Glu Phe Arg Ala Leu Phe Pro Ser Asp Ala Gln Glu Leu
 340 345 350
 Pro Ser Ala Lys Asp Gly Ser Asn Tyr Val Pro Ala Ile Asn Ser Ser
 355 360 365
 Glu Tyr Met Tyr Asp Phe Lys Asp Leu Ser Val Leu Lys Lys Ser Leu
 370 375 380
 Ser Glu Arg Leu Ala Phe Cys Glu Lys Ile Pro Ser Pro Ser Ser Trp
 385 390 395 400
 Asn Phe Thr Ser Ser Val Ala Ser His Tyr Lys Asp Phe Ser Leu Leu
 405 410 415
 Phe Thr Phe Phe Ser Asn Gln Gln Ser Val Ile Leu Gln Asn Pro Phe
 420 425 430
 Leu Leu Ile Glu Leu Leu His Glu Asn Pro Lys Cys Gln Thr Phe Leu
 435 440 445
 Lys Gly Leu Leu Glu Lys Ala Met Pro Met Ser Asn Trp Ala Ala Leu
 450 455 460
 Phe Arg Pro Met Leu Met Gly Met Leu Cys Ser Gly Ile Ala Arg Lys
 465 470 475 480

Lys Glu Leu Lys Ile Ala Glu His Leu Gly Val Phe Lys Glu
 485 490 495
 Ile Thr Gln Ala Ile Gly Ser Gly Lys Ile Leu Asp Leu Leu Leu Gln
 500 505 510
 His Leu Phe Asp Phe
 515

<210>299

<211>500

<212>PRT

<213>Chlamydia pneumoniae

<400>299

Ser Cys Arg Glu Ser Lys Gly Lys Ile Met Val Gly Glu Gln Asn Arg
 1 5 10 15
 Asn Glu Glu Lys Leu Asp Thr Ala Phe Ser Ser Gly Asn Leu Met Asp
 20 25 30
 Ser Arg Thr Ser His Leu Asp Asp Glu Leu Ser Phe Lys Leu Glu Lys
 35 40 45
 Ala Phe Thr Cys Leu Ser Thr Asp Ile His Ser His Asp Leu Ser Lys
 50 55 60
 Ile Val Ile Glu Tyr Asn Pro Ile Asp Leu Ala Tyr Ala Val Ser Cys
 65 70 75 80
 Leu Pro Ser Glu Ser Arg Ala Ile Leu Tyr Lys Asn Leu Ser Cys Ile
 85 90 95
 Thr Ala Lys Val Ala Phe Ile Ile Asn Thr Asp Ser Ala Ser Arg Trp
 100 105 110
 Ala Ile Phe Arg Arg Leu Ser Asp Ser Glu Val Cys Ala Leu Ile Glu
 115 120 125
 Gln Met Pro Pro Asp Glu Ala Val Trp Val Leu Asp Asp Ile Pro Asp
 130 135 140
 Arg Arg Tyr Arg Arg Ile Leu Glu Leu Ile Asp Ser Lys Lys Ala Leu
 145 150 155 160
 Lys Ile Arg Asp Leu Gln Lys His Gly Arg Asn Thr Ala Gly Arg Leu
 165 170 175
 Met Thr Asn Glu Phe Phe Ala Phe Leu Met Glu Thr Thr Val Lys Asp
 180 185 190
 Val Ser Ala Cys Ile Arg Ser Asn Pro Gly Ile Asp Leu Thr Arg Leu
 195 200 205
 Val Phe Val Leu Asp Phe Lys Gly Glu Leu Gln Gly Val Val Thr Asp
 210 215 220
 Arg Ser Leu Ile Ile Asn Pro Pro Glu Met Ser Leu Lys Gln Ile Met
 225 230 235 240
 Asn Gln Ile Glu His Lys Val Leu Pro Asp Ala Thr Arg Glu Glu Val
 245 250 255
 Val Asp Leu Val Glu Arg Tyr Lys Ile Ala Ala Leu Pro Val Val Asp
 260 265 270
 Glu Glu Asn Phe Leu Ile Gly Ala Ile Thr Tyr Glu Asp Val Val Glu
 275 280 285
 Ala Ile Glu Asp Ile Ala Asp Glu Thr Ile Ala Arg Met Ala Gly Thr
 290 295 300
 Thr Glu Asp Val Gly Tyr Gln Thr Cys His Val Val Gln Arg Phe Leu
 305 310 315 320
 Leu Arg Ala Pro Trp Leu Leu Val Thr Leu Phe Ala Gly Leu Ile Ser
 325 330 335
 Ala Ser Val Met Ala Tyr Phe Gln Lys Ile Ser Pro Ala Leu Leu Ala
 340 345 350
 Leu Ile Ile Phe Phe Ile Pro Leu Ile Asn Gly Met Ser Gly Asn Val
 355 360 365
 Gly Val Gln Cys Ser Thr Ile Leu Val Arg Ser Met Ala Thr Gly Thr
 370 375 380
 Leu Ser Phe Gly Arg Arg Arg Glu Thr Ile Phe Lys Glu Met Ser Ile
 385 390 395 400
 Gly Leu Leu Thr Gly Val Val Leu Gly Ile Leu Cys Gly Leu Val Val
 405 410 415
 Tyr Leu Met Gly Phe Leu Gly Leu Asn Ile Phe Ser Gly Gly Gly Ile

420
 Gln Leu Gly Val Thr Ala Thr Gly Val Leu Gly Ala Ser Leu Thr
 435 440 445
 Ala Thr Thr Leu Gly Val Leu Ser Pro Phe Phe Phe Ala Lys Leu Gly
 450 455 460
 Val Asp Pro Ala Leu Ala Ser Gly Pro Ile Val Thr Ala Leu Asn Asp
 465 470 475 480
 Ile Met Ser Met Ile Ile Phe Phe Leu Ile Ala Gly Gly Ile Asn Phe
 485 490 495
 Leu Phe Phe Asn
 500
 <210>300
 <211>714
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>300
 Arg Arg Cys Met Ile Arg Ser Pro Leu Pro Phe Ile Ser Ser Lys Arg
 1 5 10 15
 Ala Leu Asn Met Leu Gly Leu Gln Asp Glu Phe Ser Cys Pro Glu Asp
 20 25 30
 Val Val Asp Phe Leu Phe Ser Glu Ile Glu Leu Leu Ala Gln Gln Asp
 35 40 45
 Glu Pro Ser Glu Gly Tyr Leu Ala Leu Ser Arg Ser Leu Leu Met Met
 50 55 60
 Thr His Asn His Pro Lys Val Val Lys Arg Val Ile Phe Tyr Gly Val
 65 70 75 80
 Ser Tyr Gly Leu Lys His Lys Ser Met Ser Ile Phe Ile Asp Val Leu
 85 90 95
 Thr Tyr Ile Asp Phe Leu Phe Glu Lys Leu Gly Ile Ser Ala Ser Asp
 100 105 110
 Arg Leu Ser Leu Cys Ser Ala Arg Thr Cys Ile Asn Phe Glu Leu Tyr
 115 120 125
 Ser Gln Thr Gly Glu Met Lys Phe Leu Ser Glu Val Val Asp Asn Phe
 130 135 140
 Arg Leu Ile Glu Gln Leu Leu Lys Met His Pro Gln Leu Lys Asn Arg
 145 150 155 160
 Phe Gly Trp Glu His Phe Arg Ile Gly Ala Lys Gln Glu Glu Val Ser
 165 170 175
 Leu Val Ala Ser Ala Ser Val Tyr Gln Ala Val Gly Arg Ser Phe Ile
 180 185 190
 Glu Leu Tyr His Lys His Leu Glu Leu Ser Asp Leu Ala Cys Gly Met
 195 200 205
 Lys Cys Leu Ala Leu Ala Leu Asp Leu Ser Pro Asn Asn Ala His Ile
 210 215 220
 His Ala Asp Tyr Ala Lys Gly Leu Val Val Leu Gly Thr Arg Gln Gly
 225 230 235 240
 Lys Ser Leu Leu Ile Glu Arg Gly Met Glu His Phe Ser Lys Ala Ile
 245 250 255
 Phe Leu Ser Phe Ser Arg Asp Gly Asp Thr Leu Ala Tyr Gln Asn Tyr
 260 265 270
 Arg Tyr Ser Tyr Ala Leu Ala Ser Val Lys Leu Phe Asp Leu Thr Tyr
 275 280 285
 Lys Lys Glu His Phe Asp Gln Ala Met Asn Ile Leu Tyr Gln Thr Val
 290 295 300
 Gln Ala Phe Pro Asn Leu Ser Gly Leu Trp Met Val Trp Gly Glu Leu
 305 310 315 320
 Leu Ile Arg Ser Gly Trp Leu Asn Ser Asn Met Lys Tyr Ile Glu Val
 325 330 335
 Gly Leu Glu Lys Leu Ala Ser Leu Gln Lys Lys Thr Asn Asp Pro Ile
 340 345 350
 Ala Leu Ser Gly Leu Leu Ala Thr Gly Ile Ala Ile Leu Gly Leu Tyr
 355 360 365
 Leu Glu Glu Pro Asn Leu Phe Lys Asp Ser Arg His Arg Leu Ile Ser
 370 375 380

Ala Met Arg Met Phe Pro Gly Asn Ser Ala Leu Val His Ala Leu Gly
 385 390 395 400
 Val Val Gln Leu Cys Ser Ala Leu Tyr Phe Asn Glu Asp Ser His Phe
 405 410 415
 Ala Ser Ala Ile Ser Cys Phe Gln Ser Cys Leu Glu Trp Asp Leu Asp
 420 425 430
 Ala Thr Gly Met Trp Gln Lys Leu Phe Asp Ala Tyr Phe Ser Trp Gly
 435 440 445
 Ile Lys Lys Lys Ser Ala Arg Leu Leu Arg Lys Ala Val Asp Val Ala
 450 455 460
 Ser Arg Leu Cys Ser Leu Arg Pro Glu Ala Phe Leu Phe Trp Ser Asp
 465 470 475 480
 Arg Gly Leu Ala Leu Lys Cys Leu Ala Glu Ala Thr Ile Asp Glu Ala
 485 490 495
 Tyr Lys Glu Ile Phe Leu Ser Glu Ser Leu Leu His Tyr Gln Arg Ala
 500 505 510
 Trp Asp Leu Ser Gly Arg Leu Glu Ile Leu Glu Leu Trp Gly Gln Ser
 515 520 525
 His Tyr Leu Leu Ala Glu Leu Gln Gln Ser Leu Phe His Tyr Asp Glu
 530 535 540
 Ala Tyr Thr Leu Leu Thr Lys Val Asp Leu Thr Leu Ser Ser Ser Arg
 545 550 555 560
 Val Lys Leu Ile Leu Ala Ala Val Leu Leu Gly Lys Gly Arg Leu Leu
 565 570 575
 Gln Asp Thr Asp Pro Ala Glu Glu Ala Arg Glu Ile Leu Glu Pro Leu
 580 585 590
 Val Glu Val Tyr Leu Glu Asp Glu Asn Phe Leu Leu Leu Leu Gly Lys
 595 600 605
 Val Tyr Leu Phe Leu Phe Trp Lys Asn Lys Asn Val Cys Leu Gly Lys
 610 615 620
 Leu Ala Arg Thr Tyr Leu Glu Lys Ala Thr Ser Leu Gly Cys Pro Glu
 625 630 635 640
 Ala Tyr Tyr Thr Leu Gly Lys Phe Tyr Ala Val Ile Lys Asp Val Asn
 645 650 655
 Lys Ala Trp Gly Met Val Ile Arg Ser Ala Gln Tyr Gly Val Arg Ile
 660 665 670
 Thr Glu Ala Lys Trp Leu Asn Asp Pro Tyr Leu Ala Asn Leu Arg Glu
 675 680 685
 Ile His Ala Phe Arg Glu Val Val Glu Asn Gln Lys Gly Arg Leu Trp
 690 695 700
 Leu Gly Asn Lys Thr Glu Met Lys Arg Asn
 705 710

<210>301

<211>405

<212>PRT

<213>Chlamydia pneumoniae

<400>301

Ile Ser Ile Thr Ile Arg Glu Phe Leu Phe Phe Gly Phe Glu Cys Arg
 1 5 10 15
 Ala Lys Phe Tyr Asn Val Ile Met Ser Cys Phe Asn Leu Thr Ser Thr
 20 25 30
 Asn Glu Ser Leu Arg Pro Ile Ser Pro Lys Ala Ser Phe Pro Lys Gln
 35 40 45
 Gly Trp Gln Ser Tyr Phe Arg Ser Ala Leu Arg Lys His Arg Ser Asp
 50 55 60
 Thr Leu Ser Val Ser Val Cys Lys Val Asn Lys Tyr Asp Ala Asn Leu
 65 70 75 80
 Phe Val Arg Leu Thr Val Ile Ala Leu Ala Val Val Gly Val Leu Ile
 85 90 95
 Leu Phe Ser Ile Met Leu Ala Ser Ile Gln Gly Thr Leu Val Ile Thr
 100 105 110
 Ser Trp Pro Leu Val Thr Ala Ala Ile Leu Ile Pro Thr Ile Leu Leu
 115 120 125
 Thr Gly Gly Met Tyr Ile Leu His Arg Leu Gly Lys Lys Val Asp Val

130		135		140	
Ile Ser Gly Val Cys	Pro Pro Phe Ser Arg Arg Cys	Tyr Val Pro			
145	150	155	160		
Ile Ser Ser Ser His Thr Leu Glu Lys Phe Asp Glu Lys His Val Ser					
165	170	175			
Ala Cys Ser Tyr Leu Asp Ile Ser Thr Leu Ser Ala Asp Gly Ser Gly					
180	185	190			
Ile Ala Ala Val Tyr Gln Cys Pro Pro Leu Leu Phe Arg Ala Phe Pro					
195	200	205			
Cys Phe Gly Ile Pro Cys Ala Met Pro Phe Val Ala Leu Leu Arg Met					
210	215	220			
Ile Tyr Asn Leu Ile Arg Phe Leu Val Val Pro Phe Tyr Ile Ile Phe					
225	230	235	240		
Arg Met Ile Tyr Glu His Phe Phe Cys Lys His Leu Pro Glu Asp Asp					
245	250	255			
Arg Phe Ile Tyr Lys Asp Val Ala Arg Glu Met Gly Arg Ser Leu Ala					
260	265	270			
Ala Phe Leu Lys Ala Pro Phe Tyr Ala Ser Ala Cys Met Ile Gly Ala					
275	280	285			
Phe Tyr Ser Leu Leu Asp Pro Leu Ala Gly Arg Val Leu Met Gly Ser					
290	295	300			
Val Glu Arg Asp Trp Asn Asp Asn Val Ile Leu Ala Arg Ser Val Ser					
305	310	315	320		
Leu Ala Asn Glu Ala His Ser Leu Phe Arg Phe Glu Gly Gly Gly Gly					
325	330	335			
Arg Lys Gly Leu Gly Gln His Ala Phe Tyr Leu Met Leu Cys Cys Gln					
340	345	350			
Pro Gln Ser Val Phe Leu Phe Asp Lys Gly Glu Ile Val Ser Gly Ala					
355	360	365			
His Pro Ser Ile Gln Leu Pro Glu Arg Arg Gly Leu Asp Thr Ser Gly					
370	375	380			
Arg Tyr Pro His Ile Ser Val Ile Pro Asp Ser Gly Asn Asp Ser Ala					
385	390	395	400		
Lys Asn Phe Ile Val					
405					

<210>302

<211>400

<212>PRT

<213>Chlamydia pneumoniae

<400>302

Asn Phe Asn Arg Leu Met Lys Lys Gln Arg Ser His Tyr Thr Lys Asn					
1	5	10	15		
Asn Leu Leu Leu Leu Ser Ile Leu Val Gly Leu Gly Leu Gly Ser					
20	25	30			
Val Gln Ser Pro Trp Ile Val Tyr Ser Ala Glu Cys Ile Ala Asn Thr					
35	40	45			
Phe Leu Lys Phe Leu Arg Leu Leu Ser Ile Pro Leu Val Phe Cys Ala					
50	55	60			
Leu Gly Ser Thr Ile Thr Ser Ile Gln Asn Phe Asn Thr Met Val Thr					
65	70	75	80		
Leu Gly Lys Arg Ile Leu Tyr Tyr Thr Leu Leu Thr Thr Val Ile Ala					
85	90	95			
Ala Ser Ile Gly Leu Leu Leu Phe Phe Leu Leu Arg Pro Gln Met Ile					
100	105	110			
Thr Gln Asp Ala Leu Ala Thr Thr Thr Lys Cys Asn Pro Leu Gly Tyr					
115	120	125			
Leu Asp Val Leu Ser Asp Thr Leu Pro Glu Asn Ile Phe Lys Pro Phe					
130	135	140			
Leu Gln Gly Asn Val Ile Ser Ala Ala Cys Leu Ala Val Leu Leu Gly					
145	150	155	160		
Thr Ala Ser Leu Phe Leu Gln Glu Lys Glu Lys His Phe Val Asn Gln					
165	170	175			
Phe Phe Asn Ser Phe Phe Ser Ile Phe Leu Asn Leu Ala Arg Gly Gly					
180	185	190			

Leu Lys Leu Leu Phe Ala Met Leu Gly Phe Ser Val Leu Phe
 195 200 205
 Lys Glu Leu Lys Asp Gln Ser Asn Leu Thr Met Phe Ala Glu Tyr Leu
 210 215 220
 Leu Cys Val Ile Gly Ala Asn Leu Ala Gln Gly Phe Ile Val Leu Pro
 225 230 235 240
 Ile Leu Leu Lys Ile Asn Lys Val Ser Pro Leu Lys Val Ala Lys Ala
 245 250 255
 Met Ser Pro Ala Leu Val Thr Ala Phe Phe Ser Lys Ser Ser Ala Ala
 260 265 270
 Thr Leu Pro Leu Thr Met Glu Leu Ala Glu Asp Asp Leu Lys Ile Asn
 275 280 285
 Lys Asn Leu Ser Arg Phe Ser Phe Pro Leu Cys Ser Val Ile Asn Met
 290 295 300
 Asn Gly Cys Ala Ala Phe Ile Leu Ile Thr Val Leu Phe Val Ala Thr
 305 310 315 320
 Ser Asn Gly Met Ile Ile Ser Pro Leu Met Ser Leu Gly Trp Ile Phe
 325 330 335
 Ile Ala Thr Leu Ala Ala Ile Gly Asn Ala Gly Val Pro Met Gly Cys
 340 345 350
 Tyr Phe Leu Thr Leu Ser Leu Leu Thr Ser Met Asn Val Pro Leu Ser
 355 360 365
 Ile Leu Gly Leu Ile Leu Pro Phe Tyr Thr Val Ile Asp Met Ile Glu
 370 375 380
 Thr Ser Leu Asn Val Trp Ser Asp Cys Cys Val Ser Leu Ala Asn
 385 390 395 400

<210>303

<211>234

<212>PRT

<213>Chlamydia pneumoniae

<400>303

Ser Trp Gly Ile Ile Ile Phe Ser Thr Cys Ala Ser Leu Asp Ile Leu
 1 5 10 15
 Gly Thr Thr Gln Leu Gln Asp Gly Ala Gly Ala Ser Ser Ile Gly Ile
 20 25 30
 Thr Phe Ile Tyr Leu Pro Glu Leu Phe Thr Arg Leu Pro Gly Gly Ile
 35 40 45
 Tyr Leu Thr Thr Leu Phe Ser Ser Ile Phe Phe Leu Ala Phe Ser Met
 50 55 60
 Ala Ala Leu Ser Ser Met Ile Ser Met Leu Phe Leu Leu Ser Gln Thr
 65 70 75 80
 Leu Ala Glu Phe Gly Ile Lys Pro Tyr Ile Ser Glu Thr Leu Ala Thr
 85 90 95
 Ile Ile Ala Phe Val Leu Gly Ile Pro Ser Ala Leu Ser Leu Thr Phe
 100 105 110
 Phe Ser Asn Gln Asp Thr Val Trp Gly Val Ala Leu Ile Val Asn Gly
 115 120 125
 Leu Ile Phe Ile Tyr Ala Ala Leu Val Tyr Gly Phe Pro Lys Leu Lys
 130 135 140
 Lys Glu Val Ile Asn Ala Ala Pro Gly Asp Leu Arg Leu Asn Lys Ala
 145 150 155 160
 Phe Asp Tyr Ile Ile Lys Tyr Leu Leu Leu Ile Glu Gly Ile Leu Leu
 165 170 175
 Leu Gly Trp Tyr Phe Tyr Glu Gly Leu Phe Pro Glu Asn Gly Gln Trp
 180 185 190
 Trp Asn Pro Ile Ser Leu Tyr Ser Leu Gly Ser Leu Val Leu Gln Trp
 195 200 205
 Ser Leu Gly Leu Ile Ile Leu Trp Lys Phe Asn Lys Gln Leu Tyr Leu
 210 215 220
 Arg Phe Ser Arg Tyr Asn His Glu Ile Leu
 225 230

<210>304

<211>179

<212>PRT

<213>Chlamydia pneum

<400>304

Glu Lys His Met Ser Ala Pro Ile Pro Thr Pro Gln Glu Leu Ser Asp
 1 5 10 15
 Gln Ile Thr Cys Leu Asn Val Gln Tyr Gln Gln Val Ser Glu Leu Ala
 20 25 30
 Arg Glu Asn Lys Gly Asp Ile Glu Gly Leu Lys Thr Leu Thr Ala Ala
 35 40 45
 Leu Thr Ala Asp Ala Gly Ile Gln Pro Ser Ala Asp Glu Ile Tyr Ser
 50 55 60
 Leu Gln Thr Ala Ala Ala Leu Ile Leu Ser Ala Ser Glu Lys Pro Gly
 65 70 75 80
 Ser Gly Pro Ser Gly Ser Thr Glu Gly Ser Val Thr Val Gln Ser Pro
 85 90 95
 Cys Lys Phe Lys Lys Val Leu Ala Val Val Leu Thr Ile Ile Ala Leu
 100 105 110
 Ile Ala Ile Ala Val Leu Ile Ala Cys Ile Ile Ala Ala Cys Gly Gly
 115 120 125
 Phe Pro Leu Leu Leu Ser Ala Leu Asn Leu Tyr Thr Ile Gly Ala Cys
 130 135 140
 Val Ser Leu Pro Ile Ile Ala Ser Thr Ser Val Ala Leu Ile Cys Leu
 145 150 155 160
 Cys Thr Phe Val Ala Asn Ser Leu Ile Lys Pro Val Ile Thr Val Arg
 165 170 175
 Thr Thr Arg

<210>305

<211>212

<212>PRT

<213>Chlamydia pneumoniae

<400>305

Val Lys Asn Thr Lys Asn Ser Asp Phe Met Thr Ser Pro Ile Pro Phe
 1 5 10 15
 Gln Ser Ser Gly Asp Ala Ser Phe Leu Ala Glu Gln Pro Gln Gln Leu
 20 25 30
 Pro Ser Thr Ser Glu Ser Gln Leu Val Thr Gln Leu Leu Thr Met Met
 35 40 45
 Lys His Thr Gln Ala Leu Ser Glu Thr Val Leu Gln Gln Gln Arg Asp
 50 55 60
 Arg Leu Xaa Thr Ala Ser Ile Ile Leu Gln Val Gly Gly Ala Pro Thr
 65 70 75 80
 Gly Gly Ala Gly Ala Pro Phe Gln Pro Gly Pro Ala Asp Asp His His
 85 90 95
 His Pro Ile Pro Pro Val Val Pro Ala Gln Ile Glu Thr Glu Ile
 100 105 110
 Thr Thr Ile Arg Ser Glu Leu Gln Leu Met Arg Ser Thr Leu Gln Gln
 115 120 125
 Ser Thr Lys Gly Ala Arg Thr Gly Val Leu Val Val Thr Ala Ile Leu
 130 135 140
 Met Thr Ile Ser Leu Leu Ala Ile Ile Ile Ile Ile Leu Ala Val Leu
 145 150 155 160
 Gly Phe Thr Gly Val Leu Pro Gln Val Ala Leu Leu Met Gln Gly Glu
 165 170 175
 Thr Asn Leu Ile Trp Ala Met Val Ser Gly Ser Ile Ile Cys Phe Ile
 180 185 190
 Ala Leu Ile Gly Thr Leu Gly Leu Ile Leu Thr Asn Lys Asn Thr Pro
 195 200 205
 Leu Pro Ala Ser
 210

<210>306

<211>907

<212>PRT

<213>Chlamydia pneumoniae

<400>306

Val	Trp	Ser	Met	G	rg	Val	Leu	Arg	Leu	Leu	Phe	Asn	Leu	His	His
1									10					15	
Gly	Glu	Glu	Lys	Arg	Ala	Phe	Leu	Phe	Phe	Leu	Leu	Gly	Leu	Val	Trp
			20					25					30		
Gly	Ile	Gly	Cys	Tyr	Gly	Thr	Leu	Ser	Leu	Ala	Glu	Gly	Leu	Phe	Ile
		35					40					45			
Glu	Lys	Leu	Gly	Ser	Ala	Glu	Leu	Pro	Lys	Ile	Tyr	Leu	Gly	Ser	Ser
	50					55					60				
Leu	Ile	Leu	Cys	Val	Leu	Ser	Ser	Leu	Ile	Leu	Tyr	Asn	Leu	Phe	Lys
65					70					75					80
Lys	His	Ile	Ser	Ala	Thr	Ala	Leu	Phe	Leu	Ile	Pro	Val	Ser	Leu	Ser
				85					90					95	
Ile	Leu	Cys	Asn	Phe	Tyr	Leu	Ile	Leu	Ser	Ser	Ile	Phe	Ala	Ile	Asp
			100					105					110		
Pro	Pro	Arg	Ser	Pro	Leu	Phe	Phe	Tyr	Arg	Ile	Val	Ile	Trp	Ser	Leu
		115					120					125			
Thr	Ile	Leu	Ser	Tyr	Thr	Ser	Phe	Trp	Gly	Phe	Val	Asp	Gln	Phe	Phe
	130					135					140				
Asn	Leu	Gln	Asp	Gly	Lys	Arg	His	Phe	Cys	Ile	Phe	Asn	Ala	Ile	Ile
145				150					155						160
Phe	Leu	Gly	Asp	Ala	Ile	Gly	Ser	Gly	Ile	Ile	Ala	Ser	Leu	Val	His
			165					170						175	
Thr	Ile	Gly	Ile	Gln	Gly	Ile	Leu	Ile	Leu	Phe	Thr	Ala	Ala	Leu	Val
		180					185					190			
Leu	Thr	Phe	Pro	Ile	Val	Phe	Tyr	Val	Ser	Lys	Ser	Leu	Lys	Ser	Leu
	195					200					205				
Ser	Asp	Asp	His	Asp	Leu	Phe	Ile	Asp	Thr	Gly	His	Pro	Pro	Pro	Leu
	210					215				220					
Ser	Lys	Ala	Leu	Lys	Leu	Cys	Phe	Tyr	Asp	Lys	Tyr	Thr	Phe	Tyr	Leu
225				230					235						240
Leu	Cys	Phe	Tyr	Phe	Leu	Met	Gln	Leu	Leu	Ala	Ile	Ala	Thr	Glu	Phe
			245					250						255	
Asn	Tyr	Leu	Lys	Ile	Phe	Glu	Ile	Gln	Phe	Ala	Ser	Lys	Glu	Glu	Phe
		260						265					270		
Glu	Leu	Val	Ala	His	Ile	Gly	Lys	Cys	Ser	Leu	Trp	Ile	Ser	Leu	Gly
	275					280						285			
Asn	Met	Cys	Phe	Ala	Leu	Phe	Ala	Tyr	Ser	Arg	Ile	Val	Lys	Arg	Leu
	290					295				300					
Gly	Val	Asn	Asn	Ile	Ile	Leu	Phe	Ala	Pro	Leu	Cys	Phe	Leu	Ser	Leu
305				310					315						320
Phe	Leu	Phe	Trp	Thr	Phe	Lys	Thr	Thr	Leu	Ser	Ile	Ala	Val	Leu	Ala
			325					330						335	
Met	Val	Val	Arg	Glu	Gly	Val	Thr	Tyr	Ala	Leu	Asp	Asp	Asn	Asn	Leu
			340					345					350		
Gln	Leu	Leu	Ile	Tyr	Gly	Val	Pro	Asn	Lys	Ile	Arg	Asn	Gln	Ile	Arg
	355					360						365			
Ile	Val	Val	Glu	Ser	Phe	Ile	Glu	Pro	Ile	Gly	Met	Leu	Val	Trp	Ser
	370					375				380					
Leu	Val	Cys	Phe	Leu	Ser	Ser	Gln	Gln	Tyr	Val	Phe	Cys	Leu	Ile	Ile
385				390					395						400
Ser	Leu	Ile	Ala	Thr	Ile	Leu	Val	Cys	Leu	Val	Arg	Ser	Tyr	Tyr	Ala
			405					410						415	
Lys	Ala	Ile	Leu	Lys	Asn	Leu	Ser	Ala	Gln	Ala	Leu	Gln	Leu	Thr	Arg
			420					425					430		
Ser	Met	Gln	Asp	Trp	Ile	Lys	Ser	Met	Thr	Val	Lys	Gln	Lys	Arg	Gln
	435					440						445			
Val	Glu	Leu	Phe	Leu	Leu	Ala	His	Leu	Lys	His	Pro	Ser	Glu	Arg	His
	450					455				460					
Gln	Thr	Phe	Ala	Phe	Gln	His	Leu	Leu	Asn	Leu	Ala	Ser	Arg	Ser	Val
465				470					475						480
Leu	Pro	Ser	Leu	Leu	Ala	His	Met	Asn	Lys	Leu	Ser	Leu	Pro	Asn	Lys
			485					490						495	
Leu	Lys	Thr	Ile	Glu	Met	Val	Lys	Ser	Ser	Leu	Trp	Ala	Lys	Asp	Phe
			500					505					510		

Leu Thr Leu Glu Leu Lys Arg Trp Thr Ser Ile Phe His Pro
 515 520 525
 Ala Ile Ala Ser Ala Ile His Leu Tyr Phe Ala Glu His Asp Leu Leu
 530 535 540
 His Ile Thr His Ile Ala Glu Asp Leu Tyr Asp Thr Val Gly Asp Arg
 545 550 555 560
 Leu Leu Ala Ala Ile Leu Thr Val Arg Arg Gln Glu Ala Tyr Gly Pro
 565 570 575
 Tyr Arg Asp Leu Ala Asp Lys Arg Leu Lys Glu Leu Leu Asn Ser Asp
 580 585 590
 Gln Pro Glu Asp Ile Val Met Gly Leu Thr Ile Leu Lys Leu Glu Lys
 595 600 605
 Asn Pro Gln Asn Phe Pro Ile Leu Leu Asp Phe Leu Asn Thr Lys Asn
 610 615 620
 Glu Asp Ile Leu Ile Val Thr Cys Lys Ala Leu His Thr Ser Val Arg
 625 630 635 640
 Ala Asn His Lys Pro Tyr Cys Pro Glu Leu Leu Lys Arg Leu Arg Gln
 645 650 655
 Cys Ser His Asn Asp Glu Ala Ser Gln Tyr Leu Leu Lys Thr Ile Ser
 660 665 670
 Ile Ala Leu Asp Ile Ser Phe Val Lys Asp Leu Leu Met Thr Thr Ser
 675 680 685
 Gln Leu Lys Asn Thr Ser Arg Lys Tyr Ala Glu Ala Met Ile Gly Glu
 690 695 700
 Leu Asp Lys Glu Val Ala Pro Ala Phe Leu Gln Val Leu Thr Asp Glu
 705 710 715 720
 Gly Thr His Asn Arg Cys Arg Ile Leu Ala Ala Lys Ala Leu Cys Lys
 725 730 735
 Ile Asp Asn Trp Leu Leu Lys Lys His Ala Tyr Lys Ile Val Lys Ser
 740 745 750
 Lys Ala Ser Lys Ala Leu Phe Tyr Ser Tyr His Gly His Tyr Ile Gln
 755 760 765
 Lys Lys Tyr Pro Thr Tyr Asn Leu Ser Leu Leu Ala Asn Thr Leu Asn
 770 775 780
 Ser Asn Tyr Tyr Ala Glu Val Asn Phe Met Leu Ser Leu Leu Gly Ile
 785 790 795 800
 Leu Gly Ser Met Glu His Ser Gly Val Leu Ile Arg Ala Leu Thr Ser
 805 810 815
 Lys Asn Gln Lys Ile Lys Ala Gln Ala Leu Glu Ser Leu Glu Lys Asn
 820 825 830
 Cys Asp Ser His Leu Phe Ser Leu Leu Glu Pro Phe Val Asn Gln Pro
 835 840 845
 Gly Met Cys Tyr Ser Glu Lys Tyr Tyr Phe Lys Cys Gly Val Ile Pro
 850 855 860
 Leu Thr Leu Lys Glu Leu Leu Asn Met Met Glu Asn Ser Pro Ser Ser
 865 870 875 880
 Leu Asn Lys Leu Thr Ala Gln Gln Leu Lys Glu Glu Leu Ser Tyr Cys
 885 890 895
 Asp Pro Asp Phe Pro Ile Cys Lys Tyr Asn Leu
 900 905

<210>307

<211>142

<212>PRT

<213>Chlamydia pneumoniae

<400>307

Ile Arg Asn Phe Phe Met Asn Leu Ile Asp Arg Ala Phe Leu Leu Lys
 1 5 10 15
 Lys Thr Ile Ile Phe Gln Ser Leu Asp Met Asp Leu Leu Leu Thr Ile
 20 25 30
 Ala Asp Lys Thr Glu Thr Ile Ile Phe Lys Pro Gly Ser Asn Val Phe
 35 40 45
 Ser Ile Gly Gln Pro Gly Phe Ser Phe Tyr Ile Ile Val Glu Gly Tyr
 50 55 60
 Ile Thr Ile Ser Lys Glu Lys Leu Glu Ser Pro Leu Asn Leu Lys Pro

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. 65              70              75              80
Leu Asp Cys Phe Glu Glu Ser Leu Phe Asn Asn Lys Pro Arg Glu
      85              90              95
Tyr Asn Ala Ser Ala Asn Thr Gln Val Arg Met Leu Val Leu Ser Lys
      100             105             110
Gly Gln Ile Leu Asn Ile Val Glu Glu Cys Pro Ser Val Ala Leu Ser
      115             120             125
Phe Leu Glu Leu Tyr Ala Lys Gln Ile Lys Phe Arg Glu Pro
      130             135             140
<210>308
<211>79
<212>PRT
<213>Chlamydia pneumoniae
<400>308
Met Ser Leu Glu Asp Asp Val Ile Ala Ile Ile Val Glu Gln Leu Gly
  1              5              10             15
Val Asp Pro Lys Glu Val Asn Glu Asn Ser Ser Phe Ile Glu Asp Leu
      20             25             30
Asn Ala Asp Ser Leu Asp Leu Thr Glu Leu Ile Met Thr Leu Glu Glu
      35             40             45
Lys Phe Ala Phe Glu Ile Ser Glu Glu Asp Ala Glu Lys Leu Arg Thr
      50             55             60
Val Gly Asp Val Phe Thr Tyr Ile Lys Lys Arg Gln Ala Glu Gln
      65             70             75
<210>309
<211>251
<212>PRT
<213>Chlamydia pneumoniae
<400>309
Met Ile Cys Met Asp Ile Thr Leu Val Gly Lys Lys Val Ile Val Thr
  1              5              10             15
Gly Gly Ser Arg Gly Ile Gly Leu Gly Ile Val Lys Leu Phe Leu Glu
      20             25             30
Asn Gly Ala Asp Val Glu Ile Trp Gly Leu Asn Glu Glu Arg Gly Gln
      35             40             45
Ala Val Ile Glu Ser Leu Thr Gly Leu Gly Gly Glu Val Ser Phe Ala
      50             55             60
Arg Val Asp Val Ser His Asn Gly Gly Val Lys Asp Cys Val Gln Lys
      65             70             75             80
Phe Leu Asp Lys His Asn Lys Ile Asp Ile Leu Val Asn Asn Ala Gly
      85             90             95
Ile Thr Arg Asp Asn Leu Leu Met Arg Met Ser Glu Asp Asp Trp Gln
      100            105            110
Ser Val Ile Ser Thr Asn Leu Thr Ser Leu Tyr Tyr Thr Cys Ser Ser
      115            120            125
Val Ile Arg His Met Ile Lys Ala Arg Ser Gly Ser Ile Ile Asn Val
      130            135            140
Ala Ser Ile Val Ala Lys Ile Gly Ser Ala Gly Gln Thr Asn Tyr Ala
      145            150            155            160
Ala Ala Lys Ala Gly Ile Ile Ala Phe Thr Lys Ser Leu Ala Lys Glu
      165            170            175
Val Ala Ala Arg Asn Ile Arg Val Asn Cys Leu Ala Pro Gly Phe Ile
      180            185            190
Glu Thr Asp Met Thr Ser Val Leu Asn Asp Asn Leu Lys Ala Glu Trp
      195            200            205
Leu Lys Ser Ile Pro Leu Gly Arg Ala Gly Thr Pro Glu Asp Val Ala
      210            215            220
Arg Val Ala Leu Phe Leu Ala Ser Gln Leu Ser Ser Tyr Met Thr Ala
      225            230            235            240
Gln Thr Leu Val Val Asp Gly Gly Leu Thr Tyr
      245            250
<210>310
<211>308
<212>PRT

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<213>Chlamydia pneumoniae

<400>310

Met Lys Lys Arg Tyr Ala Phe Leu Phe Pro Gly Gln Gly Ser Gln Tyr
 1 5 10 15
 Val Gly Met Gly Gln Asp Leu Tyr Met Glu Tyr Pro Glu Val Arg Glu
 20 25 30
 Leu Phe Asp Phe Ala Asn Glu Arg Leu Gly Phe Ser Leu Thr Ser Ile
 35 40 45
 Met Phe Glu Gly Pro Glu Asp Leu Leu Met Glu Thr Val His Ser Gln
 50 55 60
 Leu Ala Ile Tyr Leu His Ser Met Ala Val Val Lys Val Leu Ser Gln
 65 70 75 80
 Arg Ser Ser Ile Gln Pro Ser Leu Val Ser Gly Leu Ser Leu Gly Glu
 85 90 95
 Tyr Thr Ala Leu Val Ala Ser Asp Arg Ile Ser Val Leu Asp Gly Leu
 100 105 110
 Glu Leu Val Arg Lys Arg Gly Gln Leu Met Asn Glu Ala Cys Asn Gln
 115 120 125
 Ser Pro Gly Ala Met Ala Ala Leu Leu Gly Leu Pro Ser Glu Val Ile
 130 135 140
 Glu Glu Asn Ile Thr Ser Leu Gly Gln Gly Ile Trp Ile Ala Asn Tyr
 145 150 155 160
 Asn Ala Pro Lys Gln Leu Val Val Ala Gly Ile Ala Glu Lys Val Asp
 165 170 175
 Gln Ala Ile Glu Leu Phe Arg Asp Leu Gly Cys Lys Lys Ala Val Arg
 180 185 190
 Leu Lys Val Ser Gly Ala Phe His Thr Pro Leu Met Gln Val Ala Gln
 195 200 205
 Asp Gly Leu Ala Pro Asp Ile Tyr Ala Leu Cys Met Lys Asp Ser Ser
 210 215 220
 Leu Pro Leu Val Ser His Val Val Gly Lys Ser Leu Val Asn Thr Glu
 225 230 235 240
 Glu Met Arg Glu Cys Leu Ala Arg Gln Met Thr Ser Pro Thr Leu Trp
 245 250 255
 Tyr Gln Ser Cys Tyr His Ile Glu Ser Glu Val Asp Glu Phe Leu Glu
 260 265 270
 Leu Gly Pro Gly Lys Val Leu Ala Gly Leu Asn Arg Ser Ile Gly Ile
 275 280 285
 Ser Lys Pro Ile Thr Ser Leu Gly Thr Phe Ala Gln Ile Glu Lys Phe
 290 295 300
 Leu Ser Glu Val
 305

<210>311

<211>116

<212>PRT

<213>Chlamydia pneumoniae

<400>311

Leu Tyr His Phe Leu Asp Ser Ser Thr Arg Leu Tyr Phe Pro Ile Lys
 1 5 10 15
 Arg Ser Leu Ala Gln Ala His Leu Gly Ile Glu Asp Val Pro Thr Phe
 20 25 30
 Asp Cys Gln Ala Ala Cys Thr Gly Tyr Leu Tyr Gly Leu Ser Val Ala
 35 40 45
 Lys Ala Tyr Val Glu Ser Gly Thr Tyr Asn His Val Leu Leu Ile Ala
 50 55 60
 Ala Asp Lys Leu Ser Ser Phe Val Asp Tyr Thr Asp Arg Asn Thr Cys
 65 70 75 80
 Val Leu Phe Gly Asp Gly Gly Ala Ala Cys Val Ile Gly Glu Ser Arg
 85 90 95
 Pro Gly Ser Leu Glu Ile Asn Arg Leu Ser Leu Gly Ala Asp Gly Lys
 100 105 110
 Leu Gly Glu Tyr
 115

<210>312

<211>105

<212>PRT

<213>Chlamydia pneumoniae

<400>312

Met Trp Phe Ser Val Asn Lys Asn Lys Lys Ala Ala Ile Trp Ala Thr
 1 5 10 15
 Gly Ser Tyr Leu Pro Glu Lys Val Leu Ser Asn Ala Asp Leu Glu Lys
 20 25 30
 Met Val Asp Thr Ser Asp Glu Trp Ile Val Thr Arg Thr Gly Ile Lys
 35 40 45
 Glu Arg Arg Ile Ala Gly Pro Gln Glu Tyr Thr Ser Leu Met Gly Ala
 50 55 60
 Ile Ala Ala Glu Lys Ala Ile Ala Asn Ala Gly Leu Ser Lys Asp Gln
 65 70 75 80
 Ile Asp Cys Ile Ile Phe Ser Thr Ala Ala Pro Asp Tyr Ile Phe Pro
 85 90 95
 Ser Ser Gly Val Leu Leu Lys His Ile
 100 105

<210>313

<211>230

<212>PRT

<213>Chlamydia pneumoniae

<400>313

Arg Lys Lys Leu Val Tyr Tyr Ser Glu Ser Leu Tyr Ser Asn Leu Asn
 1 5 10 15
 Leu Gly Pro Arg Pro Glu Cys Lys Asn Lys Ile His Ile Thr Met Thr
 20 25 30
 Arg Tyr Pro Asp Tyr Leu Ser Lys Leu Ile Phe Phe Leu Arg Lys Leu
 35 40 45
 Pro Gly Ile Gly Phe Lys Thr Ala Glu Lys Leu Ala Phe Glu Leu Ile
 50 55 60
 Ser Trp Asp Ser Glu Gln Leu Lys Ile Leu Gly Asn Ala Phe His Asn
 65 70 75 80
 Val Ala Ser Glu Arg Ser His Cys Pro Leu Cys Phe Thr Leu Lys Glu
 85 90 95
 Ser Lys Glu Ala Asp Cys His Phe Cys Arg Glu Glu Arg Asp Asn Gln
 100 105 110
 Ser Leu Cys Ile Val Ala Ser Pro Lys Asp Val Phe Phe Leu Glu Arg
 115 120 125
 Ser Lys Val Phe Lys Gly Arg Tyr His Val Leu Gly Ser Leu Leu Ser
 130 135 140
 Pro Ile Thr Gly Lys His Ile Glu Asn Glu Arg Leu Ser Ile Leu Lys
 145 150 155 160
 Ser Arg Ile Glu Thr Leu Cys Pro Lys Glu Ile Ile Leu Ala Ile Asp
 165 170 175
 Ala Thr Leu Glu Gly Asp Ala Thr Ala Leu Phe Leu Lys Gln Glu Leu
 180 185 190
 Gln His Phe Ser Val Asn Ile Ser Arg Leu Ala Leu Gly Leu Pro Ile
 195 200 205
 Gly Leu Ser Phe Asp Tyr Val Asp Ser Gly Thr Leu Ala Arg Ala Phe
 210 215 220
 Ser Gly Arg His Ser Tyr
 225 230

<210>314

<211>795

<212>PRT

<213>Chlamydia pneumoniae

<400>314

Gly Arg Leu Leu Gly Met Leu Ile Met Arg Asn Lys Val Ile Leu Gln
 1 5 10 15
 Ile Ser Ile Leu Ala Leu Ile Gln Thr Pro Leu Thr Leu Phe Ser Thr
 20 25 30
 Glu Lys Val Lys Glu Gly His Val Val Val Asp Ser Ile Thr Ile Ile
 35 40 45

Thr	Glu	Gly	Glu	Asn		Ser	Asn	Lys	His	Pro	Leu	Pro	Ile	Leu	Lys
50						55					60				
Thr	Arg	Ser	Gly	Ala	Leu	Phe	Ser	Gln	Leu	Asp	Phe	Asp	Glu	Asp	Leu
65					70					75					80
Arg	Ile	Leu	Ala	Lys	Glu	Tyr	Asp	Ser	Val	Glu	Pro	Lys	Val	Glu	Phe
				85					90					95	
Ser	Glu	Gly	Lys	Thr	Asn	Ile	Ala	Leu	His	Leu	Ile	Ala	Lys	Pro	Ser
			100					105					110		
Ile	Arg	Asn	Ile	His	Ile	Ser	Gly	Asn	Gln	Val	Val	Pro	Glu	His	Lys
		115					120					125			
Ile	Leu	Lys	Thr	Leu	Gln	Ile	Tyr	Arg	Asn	Asp	Leu	Phe	Glu	Arg	Glu
	130					135					140				
Lys	Phe	Leu	Lys	Gly	Leu	Asp	Asp	Leu	Arg	Thr	Tyr	Tyr	Leu	Lys	Arg
145					150					155					160
Gly	Tyr	Phe	Ala	Ser	Ser	Val	Asp	Tyr	Ser	Leu	Glu	His	Asn	Gln	Glu
				165						170				175	
Lys	Gly	His	Ile	Asp	Val	Leu	Ile	Lys	Ile	Asn	Glu	Gly	Pro	Cys	Gly
			180					185					190		
Lys	Ile	Lys	Gln	Leu	Thr	Phe	Ser	Gly	Ile	Ser	Arg	Ser	Glu	Lys	Ser
	195						200					205			
Asp	Ile	Gln	Glu	Phe	Ile	Gln	Thr	Lys	Gln	His	Ser	Thr	Thr	Thr	Ser
	210					215					220				
Trp	Phe	Thr	Gly	Ala	Gly	Leu	Tyr	His	Pro	Asp	Ile	Val	Glu	Gln	Asp
225					230					235					240
Ser	Leu	Ala	Ile	Thr	Asn	Tyr	Leu	His	Asn	Asn	Gly	Tyr	Ala	Asp	Ala
				245					250					255	
Ile	Val	Asn	Ser	His	Tyr	Asp	Leu	Asp	Asp	Lys	Gly	Asn	Ile	Leu	Leu
		260						265				270			
Tyr	Met	Asp	Ile	Asp	Arg	Gly	Ser	Arg	Tyr	Thr	Leu	Gly	His	Val	His
	275						280					285			
Ile	Gln	Gly	Phe	Glu	Val	Leu	Pro	Lys	Arg	Leu	Ile	Glu	Lys	Gln	Ser
	290					295					300				
Gln	Val	Gly	Pro	Asn	Asp	Leu	Tyr	Cys	Pro	Asp	Lys	Ile	Trp	Asp	Gly
305					310					315					320
Ala	His	Lys	Ile	Lys	Gln	Thr	Tyr	Ala	Lys	Tyr	Gly	Tyr	Ile	Asn	Thr
				325					330					335	
Asn	Val	Asp	Val	Leu	Phe	Ile	Pro	His	Ala	Thr	Arg	Pro	Ile	Tyr	Asp
			340					345					350		
Val	Thr	Tyr	Glu	Val	Ser	Glu	Gly	Ser	Pro	Tyr	Lys	Val	Gly	Leu	Ile
	355						360					365			
Lys	Ile	Thr	Gly	Asn	Thr	His	Thr	Lys	Ser	Asp	Val	Ile	Leu	His	Glu
	370					375					380				
Thr	Ser	Leu	Phe	Pro	Gly	Asp	Thr	Phe	Asn	Arg	Leu	Lys	Leu	Glu	Asp
385					390					395					400
Thr	Glu	Gln	Arg	Leu	Arg	Asn	Thr	Gly	Tyr	Phe	Gln	Ser	Val	Ser	Val
				405					410					415	
Tyr	Thr	Val	Arg	Ser	Gln	Leu	Asp	Pro	Met	Gly	Asn	Ala	Asp	Gln	Tyr
			420					425					430		
Arg	Asp	Ile	Phe	Val	Glu	Val	Lys	Glu	Thr	Thr	Thr	Gly	Asn	Leu	Gly
		435					440					445			
Leu	Phe	Leu	Gly	Phe	Ser	Ser	Leu	Asp	Asn	Leu	Phe	Gly	Gly	Ile	Glu
	450					455					460				
Leu	Ser	Glu	Ser	Asn	Phe	Asp	Leu	Phe	Gly	Ala	Arg	Asn	Ile	Phe	Ser
465					470					475					480
Lys	Gly	Phe	Arg	Cys	Leu	Arg	Gly	Gly	Gly	Glu	His	Leu	Phe	Leu	Lys
				485					490					495	
Ala	Asn	Phe	Gly	Asp	Lys	Val	Thr	Asp	Tyr	Thr	Leu	Lys	Trp	Thr	Lys
			500					505					510		
Pro	His	Phe	Leu	Asn	Thr	Pro	Trp	Ile	Leu	Gly	Ile	Glu	Leu	Asp	Lys
		515					520					525			
Ser	Ile	Asn	Arg	Ala	Leu	Ser	Lys	Asp	Tyr	Ala	Val	Gln	Thr	Tyr	Gly
	530					535					540				
Gly	Asn	Val	Ser	Thr	Thr	Tyr	Ile	Leu	Asn	Glu	His	Leu	Lys	Tyr	Gly
545					550					555					560

Leu Phe Tyr Arg Gln Thr Ser Leu His Glu Lys Arg Lys Phe
 565 570 575
 Leu Leu Gly Pro Asn Ile Asp Ser Asn Lys Gly Phe Val Ser Ala Ala
 580 585 590
 Gly Val Asn Leu Asn Tyr Asp Ser Val Asp Ser Pro Arg Thr Pro Thr
 595 600 605
 Thr Gly Ile Arg Gly Gly Val Thr Phe Glu Val Ser Gly Leu Gly Gly
 610 615 620
 Thr Tyr His Phe Thr Lys Leu Ser Leu Asn Ser Ser Ile Tyr Arg Lys
 625 630 635 640
 Leu Thr Arg Lys Gly Ile Leu Lys Ile Lys Gly Glu Ala Gln Phe Ile
 645 650 655
 Lys Pro Tyr Ser Asn Thr Thr Ala Glu Gly Val Pro Val Ser Glu Arg
 660 665 670
 Phe Phe Leu Gly Gly Glu Thr Thr Val Arg Gly Tyr Lys Ser Phe Ile
 675 680 685
 Ile Gly Pro Lys Tyr Ser Ala Thr Glu Pro Gln Gly Gly Leu Ser Ser
 690 695 700
 Leu Leu Ile Ser Glu Glu Phe Gln Tyr Pro Leu Ile Arg Gln Pro Asn
 705 710 715 720
 Ile Ser Ala Phe Val Phe Leu Asp Ser Gly Phe Val Gly Leu Gln Glu
 725 730 735
 Tyr Lys Ile Ser Leu Lys Asp Leu Arg Ser Ser Ala Gly Phe Gly Leu
 740 745 750
 Arg Phe Asp Val Met Asn Asn Val Pro Val Met Leu Gly Phe Gly Trp
 755 760 765
 Pro Phe Arg Pro Thr Glu Thr Leu Asn Gly Glu Lys Ile Asp Val Ser
 770 775 780
 Gln Arg Phe Phe Phe Ala Leu Gly Gly Met Phe
 785 790 795

<210>315

<211>158

<212>PRT

<213>Chlamydia pneumoniae

<400>315

Asp Gln Gln Ala Gln Leu Asn Ala Asn Leu Gly Tyr Val Asn Leu Lys
 1 5 10 15
 Arg Cys Leu Glu Glu Ser Asp Leu Gly Lys Lys Glu Thr Glu Glu Leu
 20 25 30
 Glu Ala Xaa Lys Gln Gln Phe Val Lys Asn Ala Glu Lys Ile Glu Glu
 35 40 45
 Glu Leu Thr Ser Ile Tyr Asn Lys Leu Gln Asp Glu Asp Tyr Met Glu
 50 55 60
 Ser Leu Ser Asp Ser Ala Ser Glu Glu Leu Arg Lys Lys Phe Glu Asp
 65 70 75 80
 Leu Ser Gly Glu Tyr Asn Ala Tyr Gln Ser Gln Tyr Tyr Gln Ser Ile
 85 90 95
 Asn Gln Ser Asn Val Lys Arg Ile Gln Lys Leu Ile Gln Glu Val Lys
 100 105 110
 Ile Ala Ala Glu Ser Val Arg Ser Lys Glu Lys Leu Glu Ala Ile Leu
 115 120 125
 Asn Glu Glu Ala Val Leu Ala Ile Ala Pro Gly Thr Asp Lys Thr Thr
 130 135 140
 Glu Ile Ile Ala Ile Leu Asn Glu Ser Phe Lys Lys Gln Asn
 145 150 155

<210>316

<211>367

<212>PRT

<213>Chlamydia pneumoniae

<400>316

Ser Lys Phe Lys Glu Phe Ser Met Ser Glu Ala Pro Val Tyr Thr Leu
 1 5 10 15
 Lys Gln Leu Ala Glu Leu Leu Gln Val Glu Val Gln Gly Asn Ile Glu
 20 25 30

Thr Pro Ile Ser Gly Glu Asp Ile Ser Gln Ala Gln His His
 35 40 45
 Ile Ala Phe Leu Asp Asn Glu Lys Tyr Ser Ser Phe Leu Lys Asn Thr
 50 55 60
 Lys Ala Gly Ala Ile Ile Leu Ser Arg Ser Gln Ala Met Gln His Ala
 65 70 75 80
 His Leu Lys Lys Asn Phe Leu Ile Thr Asn Glu Ser Pro Ser Leu Thr
 85 90 95
 Phe Gln Lys Cys Ile Glu Leu Phe Ile Glu Pro Val Thr Ser Gly Phe
 100 105 110
 Pro Gly Ile His Pro Thr Ala Val Ile His Pro Thr Ala Arg Ile Glu
 115 120 125
 Lys Asn Val Thr Ile Glu Pro Tyr Val Val Ile Ser Gln His Ala His
 130 135 140
 Ile Gly Ser Asp Thr Tyr Ile Gly Ala Gly Ser Val Ile Gly Ala His
 145 150 155 160
 Ser Val Leu Gly Ala Asn Cys Leu Ile His Pro Lys Val Val Ile Arg
 165 170 175
 Glu Arg Val Leu Met Gly Asn Arg Val Val Val Gln Pro Gly Ala Val
 180 185 190
 Leu Gly Ser Cys Gly Phe Gly Tyr Ile Thr Asn Ala Phe Gly His His
 195 200 205
 Lys Pro Leu Lys His Leu Gly Tyr Val Ile Val Gly Asp Asp Val Glu
 210 215 220
 Ile Gly Ala Asn Thr Thr Ile Asp Arg Gly Arg Phe Lys Asn Thr Val
 225 230 235 240
 Ile His Glu Gly Thr Lys Ile Asp Asn Gln Val Gln Val Ala His His
 245 250 255
 Val Glu Ile Gly Lys His Ser Ile Ile Val Ala Gln Ala Gly Ile Ala
 260 265 270
 Gly Ser Thr Lys Ile Gly Glu His Val Ile Ile Gly Gly Gln Thr Gly
 275 280 285
 Ile Thr Gly His Ile Ser Ile Ala Asp His Val Ile Met Ile Ala Gln
 290 295 300
 Thr Gly Val Thr Lys Ser Ile Thr Ser Pro Gly Ile Tyr Gly Gly Ala
 305 310 315 320
 Pro Ala Arg Pro Tyr Gln Glu Thr His Arg Leu Ile Ala Lys Ile Arg
 325 330 335
 Asn Leu Pro Lys Thr Glu Glu Arg Leu Ser Lys Leu Glu Lys Gln Val
 340 345 350
 Arg Asp Leu Ser Thr Pro Ser Leu Ala Glu Ile Pro Ser Glu Ile
 355 360 365

<210>317

<211>354

<212>PRT

<213>Chlamydia pneumoniae

<400>317

Arg Glu Gln Lys Gly Leu His His Met Asp Val Ser Arg Lys Ile Asn
 1 5 10 15
 Arg His Thr Gln Phe Tyr Val Asp Ser Ile Asp Gly Val Ile Lys Asn
 20 25 30
 Phe Asp His Lys Pro Ser Glu Asp Lys Ser Arg Asp His Glu Glu Leu
 35 40 45
 Glu Glu Lys Leu Leu Thr Ile Thr Lys Arg Ile Val Ala Ser Ala Gln
 50 55 60
 Glu Phe Gln Asn Arg Lys Thr Asp Ser Lys Asn Tyr Tyr Leu Lys Lys
 65 70 75 80
 Thr Gln Trp Leu Pro Phe Lys Asn Glu Glu Leu Glu Gln Thr Lys Glu
 85 90 95
 Leu Phe Ala Met Leu Thr Ser Met Asp Lys Lys Ile Ala Gln Leu Phe
 100 105 110
 Phe Tyr Ser Pro Gly Cys Ser Ser Trp Val Glu Phe Thr Glu Val
 115 120 125
 Ile Cys His Leu Asn Asp Ser Ile Gly Leu Gly Gly Val Leu Leu Cys

130 135 140
 Cys Gly Leu Phe Gln Gln Cys Glu His Val Val Thr Val Asn Lys
 145 150 155 160
 Lys Leu Asp Leu Pro Leu Leu Leu Gly Thr Thr Val Val Asn Ser Leu
 165 170 175
 Arg Tyr Tyr Leu Thr Tyr Arg Asn Ile Ser Leu Leu Asn Cys Gln Ser
 180 185 190
 Met Ser Glu Leu Gly Lys Glu Leu Gly Asp Val Leu Lys Gln His Gly
 195 200 205
 Val Ala Phe Thr Leu Ile Phe Lys Glu Ile Val Asp Ile Asp Leu Leu
 210 215 220
 Asn Tyr Val Lys Leu Ile Gln Gly Leu Lys Arg Ser Gly Asn Ile Gln
 225 230 235 240
 Ala Arg Ile Tyr Asp Asn Asp Val Pro Thr Leu Pro Ser Val Ser Ser
 245 250 255
 Ser Pro Ile Ala Leu Arg Tyr Ser Leu Ala Asn Thr Ile Arg Gly Leu
 260 265 270
 Ala Leu His Val Asp Phe Ser Ser Leu Lys Phe Ile Ser Pro Ser Ile
 275 280 285
 Leu Ser Asn Thr Glu His Thr Ala Lys Ala Leu Asn Ser Gly Gly Glu
 290 295 300
 Cys Phe Ile Phe Ser Asn Leu Asp Glu Phe Asn Leu Gly Met Lys Ile
 305 310 315 320
 Val Met Gln Leu Leu Arg Thr Gly Lys Ile Ser Pro Glu Ile Leu Asn
 325 330 335
 Lys Asn Ile Met Lys Ile Leu Met Ile Lys Arg Arg Val Arg Ser Leu
 340 345 350
 Tyr Ile

<210>318

<211>342

<212>PRT

<213>Chlamydia pneumoniae

<400>318

Met Asp Ser Ser Ala Pro Tyr Asn Ile Ala Ser Gln Gly Thr Glu Lys
 1 5 10 15
 Ser Thr Val Glu Arg Ile Leu Asp Leu Tyr Gly Pro Ala Ser Cys Ile
 20 25 30
 Lys Phe Leu Lys Gln Met Val Leu Ile Arg Glu Phe Glu Ala Arg Gly
 35 40 45
 Glu Glu Ala Tyr Leu Glu Gly Leu Val Gly Gly Phe Tyr His Ser Tyr
 50 55 60
 Ala Gly Gln Glu Ala Val Ala Thr Ala Ala Ile Ala Asn Thr Gly Leu
 65 70 75 80
 Asp Pro Trp Val Phe Ser Ser Tyr Arg Cys His Ala Leu Ala Ile Leu
 85 90 95
 Leu Asn Ile Pro Leu Gln Glu Ile Ala Ala Glu Leu Leu Gly Lys Glu
 100 105 110
 Thr Gly Cys Ala Leu Gly Arg Gly Gly Ser Met His Met Cys Gly Pro
 115 120 125
 Asn Phe Pro Gly Gly Phe Gly Ile Val Gly Gly Gln Ile Pro Leu Ala
 130 135 140
 Ala Gly Ala Ala Phe Thr Ile Lys Tyr Gln Glu Gln Lys Asn Arg Val
 145 150 155 160
 Ser Leu Cys Phe Ile Gly Asp Gly Ala Val Ala Gln Gly Val Phe His
 165 170 175
 Glu Thr Leu Asn Phe Val Ser Leu His Gln Leu Pro Leu Met Leu Ile
 180 185 190
 Ile Glu Asn Asn Gly Trp Ser Met Gly Thr Ser Leu Asn Arg Ala Val
 195 200 205
 Ala Lys Gln Pro Ile Ala Glu Ser Gln Gly Ser Ser Tyr Asp Ile Arg
 210 215 220
 Ala Val Thr Val Asn Gly Phe Asp Leu Phe Asn Ser Leu Leu Gly Phe
 225 230 235 240

Arg Glu Ala Tyr Arg Met Val Asp Thr Glu Ser Pro Val Leu Val
 245 250 255
 Glu Cys Leu Cys Ser Arg Phe Arg Gly His Ser Ile Ser Asp Pro Asn
 260 265 270
 Leu Tyr Arg Ser Lys Glu Glu Met Gln Cys Leu Phe Lys Lys Asp Pro
 275 280 285
 Ile Val Leu Ala Lys Asp Trp Leu Ile Arg Leu Glu Val Leu Thr Glu
 290 295 300
 Glu Glu Phe Gln Asn Ile Arg Gln Glu Cys Lys Thr Ala Val Leu Glu
 305 310 315 320
 Ala Phe Ser Asn Ala Lys Leu Ser Ser Asp Pro Ser Val Thr Thr Leu
 325 330 335
 Glu Glu Gly Val Tyr Ala
 340

<210>319

<211>161

<212>PRT

<213>Chlamydia pneumoniae

<400>319

Arg Lys Glu Ser Met Pro Lys His Lys Thr Leu Glu Ile Arg Glu Ala
 1 5 10 15
 Leu Arg Glu Ala Ile Asp Glu Glu Met Ser Arg Asp Pro Asn Val Cys
 20 25 30
 Ile Leu Gly Glu Glu Val Gly Asp Tyr Asn Gly Ala Tyr Lys Val Thr
 35 40 45
 Lys Gly Leu Leu Asp Lys Trp Gly Pro Lys Arg Val Ile Asp Ala Pro
 50 55 60
 Ile Ser Glu Ala Ala Phe Ser Gly Ile Gly Ile Gly Ala Ala Leu Ser
 65 70 75 80
 Gly Leu Arg Pro Ile Ile Glu Phe Met Ser Trp Asn Phe Ser Phe Val
 85 90 95
 Ala Leu Asp Gln Ile Ile Ser His Ala Lys Met His Phe Met Thr
 100 105 110
 Gly Gly Lys Phe Ser Val Pro Ile Val Phe Arg Gly Pro Asn Gly Ala
 115 120 125
 Ala Ala Gln Val Ser Cys Gln His Ser His Cys Val Glu Ser Leu Tyr
 130 135 140
 Ala Asn Ile Pro Gly Leu Asn Tyr Tyr Ser Pro Phe Glu Pro Leu Arg
 145 150 155 160
 Arg

<210>320

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>320

Asn Ile Thr Leu Lys Gly Glu Val Pro Thr Glu Glu Tyr Leu Val Pro
 1 5 10 15
 Ile Gly Lys Ala His Arg Val Gln Glu Gly Asn Asp Leu Thr Ile Ile
 20 25 30
 Thr Tyr Ser Arg Met Val Ser Ile Thr Lys Glu Ala Cys Ser Leu Ala
 35 40 45
 Lys Lys Arg Trp Gly Leu Ser Ile Glu Ile Ile Asp Leu Arg Thr Ile
 50 55 60
 Lys Pro Leu Asp Ile Ser Thr Ile Leu Ser Ser Val Arg Lys Thr Ser
 65 70 75 80
 Arg Cys Ile Val Ile Glu Glu Gly His Tyr Phe Ala Gly Ile Ser Ser
 85 90 95
 Glu Ile Ile Ala Leu Ile Thr Glu His Val Phe Asp Ser Leu Asp Ala
 100 105 110
 Pro Pro Leu Arg Val Cys Gln Lys Glu Thr Pro Met Pro Tyr Ser Lys
 115 120 125
 Ile Leu Glu Gln Ala Thr Leu Pro Asn Val Asn Arg Ile Leu Asp Thr
 130 135 140

Ile Glu Lys Val Met Arg

145 150

<210>321

<211>432

<212>PRT

<213>Chlamydia pneumoniae

<400>321

Gly	Lys	Phe	Val	Ile	Ser	Leu	Leu	Lys	Met	Pro	Lys	Leu	Ser	Pro	Thr
1				5					10					15	
Met	Glu	Val	Gly	Thr	Ile	Val	Lys	Trp	His	Lys	Lys	Ser	Asn	Asp	Gln
			20					25					30		
Val	Ser	Phe	Gly	Asp	Val	Ile	Val	Glu	Ile	Ser	Thr	Asp	Lys	Ala	Ile
		35					40					45			
Leu	Glu	His	Thr	Ala	Asn	Glu	Asp	Gly	Trp	Ile	Arg	Glu	Ile	Leu	Arg
	50					55					60				
His	Glu	Gly	Glu	Lys	Ile	Val	Ile	Gly	Thr	Pro	Ile	Ala	Val	Leu	Ser
	65				70					75					80
Thr	Glu	Ala	Asn	Glu	Pro	Phe	Asn	Leu	Glu	Glu	Leu	Leu	Pro	Lys	Thr
				85					90					95	
Glu	Pro	Ser	Asn	Leu	Glu	Ala	Ser	Pro	Lys	Gly	Ser	Ser	Glu	Glu	Val
			100					105					110		
Ser	Pro	Ala	Thr	Thr	Pro	Gln	Ala	Ala	Ser	Ala	Thr	Phe	Thr	Ala	Val
		115					120					125			
Thr	Phe	Lys	Pro	Glu	Pro	Pro	Leu	Ser	Ser	Pro	Leu	Val	Phe	Lys	His
	130					135					140				
Val	Gly	Thr	Thr	Asn	Asn	Leu	Ser	Pro	Leu	Ala	Arg	Gln	Leu	Ala	Lys
145					150					155					160
Glu	Lys	Asn	Ile	Asp	Val	Ser	Ser	Ile	Gln	Gly	Ser	Gly	Pro	Gly	Gly
				165					170					175	
Arg	Ile	Val	Lys	Lys	Asp	Leu	Glu	Lys	Ala	Pro	Pro	Lys	Ser	Ile	Ala
			180					185					190		
Gly	Phe	Gly	Tyr	Pro	Glu	Ser	Pro	Glu	Val	Pro	Pro	Gly	Ser	Tyr	His
		195					200					205			
Glu	Glu	Asn	Leu	Ser	Pro	Ile	Arg	Glu	Val	Ile	Ala	Ala	Arg	Leu	Gln
	210					215					220				
Ala	Ala	Lys	Ile	Ser	Ile	Pro	His	Phe	Tyr	Val	Arg	Gln	Gln	Val	Tyr
225					230					235					240
Ala	Ser	Pro	Leu	Leu	Asn	Leu	Leu	Lys	Glu	Leu	Gln	Ala	Gln	Gly	Ile
				245					250					255	
Lys	Leu	Ser	Ile	Asn	Asp	Cys	Ile	Val	Arg	Ala	Cys	Ala	Leu	Ala	Leu
		260						265					270		
Lys	Glu	Phe	Pro	Ser	Ile	Asn	Ser	Gly	Phe	Asn	Ser	Val	Asp	Asn	Lys
		275					280					285			
Ile	Val	Arg	Phe	Asp	Thr	Ile	Asp	Ile	Ser	Ile	Ala	Val	Ala	Ile	Pro
	290					295					300				
Asp	Gly	Ile	Ile	Thr	Pro	Ile	Ile	Arg	Cys	Ala	Asp	Arg	Lys	Asn	Leu
305					310					315					320
Gly	Met	Ile	Ser	Ala	Glu	Ile	Lys	Ser	Leu	Ala	Leu	Lys	Ala	Arg	Asn
				325					330					335	
Gln	Ser	Leu	Gln	Asp	Thr	Glu	Tyr	Lys	Gly	Gly	Ser	Phe	Cys	Val	Ser
		340						345					350		
Asn	Leu	Gly	Met	Thr	Gly	Ile	Thr	Glu	Phe	Thr	Ala	Ile	Val	Asn	Pro
		355					360					365			
Pro	Gln	Ala	Ala	Ile	Leu	Ala	Val	Gly	Ser	Val	Thr	Glu	Gln	Ala	Leu
	370					375					380				
Val	Leu	Asp	Gly	Glu	Ile	Thr	Ile	Gly	Ser	Thr	Cys	Asn	Leu	Thr	Leu
385					390					395					400
Ser	Val	Asp	His	Arg	Val	Ile	Asp	Gly	Tyr	Pro	Ala	Ala	Met	Phe	Met
				405					410					415	
Lys	Arg	Leu	Gln	Lys	Ile	Leu	Glu	Ala	Pro	Ala	Val	Leu	Leu	Leu	Asn
			420					425					430		

<210>322

<211>104

<212>PRT

<213>Chlamydia pneumoniae

<400>322

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Ile Asp Glu Thr Ser Met Phe Phe Ser Phe Ala Ser Cys Leu Ala Asn
 1          5          10          15
Gly Glu Arg Leu Phe Val Val Pro Thr Cys Leu Lys Thr Lys Gly Glu
          20          25          30
Glu Arg Gly Gly Ser Gly Leu Lys Val Thr Ala Val Asn Val Ala Glu
          35          40          45
Ala Ala Cys Gly Val Val Ala Gly Glu Thr Ser Ser Glu Glu Pro Phe
          50          55          60
Gly Asp Ala Ser Arg Leu Glu Gly Ser Val Leu Gly Arg Ser Ser Ser
          65          70          75          80
Arg Leu Lys Gly Ser Leu Ala Ser Val Glu Ser Thr Ala Ile Gly Val
          85          90          95
Pro Ile Thr Ile Phe Ser Pro Ser
          100

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<210>323

<211>828

<212>PRT

<213>Chlamydia pneumoniae

<400>323

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Asn Gly Cys Ile Val Glu Asp Phe Ser Ser Phe Asp Lys Asn Lys Val
 1          5          10          15
Ser Val Asp Ser Met Lys Arg Ala Ile Leu Asp Arg Leu Tyr Leu Ser
          20          25          30
Val Val Gln Ser Pro Glu Ser Ala Ser Pro Arg Asp Ile Phe Thr Ala
          35          40          45
Val Ala Lys Thr Val Met Glu Trp Leu Ala Lys Gly Trp Leu Lys Thr
          50          55          60
Gln Asn Gly Tyr Tyr Lys Asn Asp Val Lys Arg Val Tyr Tyr Leu Ser
          65          70          75          80
Met Glu Phe Leu Leu Gly Arg Ser Leu Thr Ser Asn Leu Leu Asn Leu
          85          90          95
Gly Ile Leu Asp Leu Val Arg Lys Ala Leu Lys Thr Leu Asn Tyr Asp
          100          105          110
Phe Asp His Leu Val Glu Met Glu Ser Asp Ala Gly Leu Gly Asn Gly
          115          120          125
Gly Leu Gly Arg Leu Ala Ala Cys Tyr Leu Asp Ser Met Ala Thr Leu
          130          135          140
Ala Val Pro Ala Tyr Gly Tyr Gly Ile Arg Tyr Asp Tyr Gly Ile Phe
          145          150          155          160
Asp Gln Arg Ile Val Asn Gly Tyr Gln Glu Ala Pro Asp Glu Trp
          165          170          175
Leu Arg Tyr Gly Asn Pro Trp Glu Ile Cys Arg Gly Glu Tyr Leu Tyr
          180          185          190
Pro Val Arg Phe Tyr Gly Arg Val Ile His Tyr Thr Asp Ser Arg Gly
          195          200          205
Lys Gln Val Ala Asp Leu Val Asp Thr Gln Glu Val Leu Ala Met Ala
          210          215          220
Tyr Asp Ile Pro Ile Pro Gly Tyr Gly Asn Asp Thr Val Asn Ser Leu
          225          230          235          240
Arg Leu Trp Gln Ala Gln Ser Pro Arg Gly Phe Glu Phe Ser Tyr Phe
          245          250          255
Asn His Gly Asn Tyr Ile Gln Ala Ile Glu Asp Ile Ala Leu Ile Glu
          260          265          270
Asn Ile Ser Arg Val Leu Tyr Pro Asn Asp Ser Ile Thr Glu Gly Gln
          275          280          285
Glu Leu Arg Leu Lys Gln Glu Tyr Phe Leu Val Ser Ala Thr Ile Gln
          290          295          300
Asp Ile Ile Arg Arg Tyr Thr Lys Thr His Ile Cys Leu Asp Asn Leu
          305          310          315          320
Ala Asp Lys Val Val Val Gln Leu Asn Asp Thr His Pro Ala Leu Gly
          325          330          335
Ile Ala Glu Met Met His Ile Leu Val Asp Arg Glu Glu Leu Pro Trp

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340 345 350
 Asp Lys Ala Trp Glu Met Thr Thr Val Ile Phe Asn Tyr Thr Asn His
 355 360 365
 Thr Ile Leu Pro Glu Ala Leu Glu Arg Trp Pro Leu Asp Leu Phe Ser
 370 375 380
 Lys Leu Leu Pro Arg His Leu Glu Ile Ile Tyr Glu Ile Asn Ser Arg
 385 390 395 400
 Trp Leu Glu Lys Val Gly Ser Arg Tyr Pro Lys Asn Asp Asp Lys Arg
 405 410 415
 Arg Ser Leu Ser Ile Val Glu Glu Gly Tyr Gln Lys Arg Ile Asn Met
 420 425 430
 Ala Asn Leu Ala Val Val Gly Ser Ala Lys Val Asn Gly Val Ser Ser
 435 440 445
 Phe His Ser Gln Leu Ile Lys Asp Thr Leu Phe Lys Glu Phe Tyr Glu
 450 455 460
 Phe Phe Pro Glu Lys Phe Ile Asn Val Thr Asn Gly Val Thr Pro Arg
 465 470 475 480
 Arg Trp Ile Ala Leu Cys Asn Pro Arg Leu Ser Lys Leu Leu Asn Glu
 485 490 495
 Thr Ile Gly Asp Arg Tyr Ile Ile Asp Leu Ser His Leu Ser Leu Ile
 500 505 510
 Arg Ser Phe Ala Glu Asp Ser Gly Phe Arg Asp His Trp Lys Gly Val
 515 520 525
 Lys Leu Lys Asn Lys Gln Asp Leu Thr Ser Arg Ile Tyr Asn Glu Val
 530 535 540
 Gly Glu Ile Val Asp Pro Asn Ser Leu Phe Asp Cys His Ile Lys Arg
 545 550 555 560
 Ile His Glu Tyr Lys Arg Gln Leu Met Asn Ile Leu Arg Val Ile Tyr
 565 570 575
 Val Tyr Asn Asp Leu Lys Glu Asn Pro Asn Gln Asp Val Val Pro Thr
 580 585 590
 Thr Val Ile Phe Ser Gly Lys Ala Ala Pro Gly Tyr Val Met Ala Lys
 595 600 605
 Leu Ile Ile Lys Leu Ile Asn Ser Val Ala Asp Val Val Asn Gln Asp
 610 615 620
 Ser Arg Val Asn Asp Lys Leu Lys Val Leu Phe Leu Pro Asn Tyr Arg
 625 630 635 640
 Val Ser Met Ala Glu His Ile Ile Pro Gly Thr Asp Leu Ser Glu Gln
 645 650 655
 Ile Ser Thr Ala Gly Met Glu Ala Ser Gly Thr Gly Asn Met Lys Phe
 660 665 670
 Ala Leu Asn Gly Ala Leu Thr Ile Gly Thr Met Asp Gly Ala Asn Ile
 675 680 685
 Glu Met Ala Glu His Ile Gly Lys Glu Asn Met Phe Ile Phe Gly Leu
 690 695 700
 Leu Glu Glu Gln Ile Val Gln Leu Arg Arg Glu Tyr Cys Pro Gln Thr
 705 710 715 720
 Ile Cys Asp Lys Asn Pro Lys Ile Arg Gln Val Leu Asp Leu Leu Glu
 725 730 735
 Gln Gly Phe Phe Asn Ser Asn Asp Lys Asp Leu Phe Lys Pro Ile Val
 740 745 750
 His Arg Leu Leu His Glu Gly Asp Pro Phe Phe Val Leu Ala Asp Leu
 755 760 765
 Glu Ser Tyr Ile Ala Ala His Glu Asn Val Asn Lys Leu Phe Lys Glu
 770 775 780
 Pro Asp Ser Trp Thr Lys Ile Ser Ile Tyr Asn Thr Ala Gly Met Gly
 785 790 795 800
 Phe Phe Ser Ser Asp Arg Ala Ile Gln Asp Tyr Ala Arg Asp Ile Trp
 805 810 815
 His Val Pro Thr Lys Ser Cys Ser Gly Glu Gly Asn
 820 825

<210>324

<211>86

<212>PRT

<213>Chlamydia pneumoniae

<400>324

Val Phe Ser His Pro Leu Ala Asn His Ser Ile Thr Val Phe Ala Thr
 1 5 10 15
 Ala Val Lys Ile Ser Leu Gly Asp Ala Asp Ser Gly Asp Cys Thr Thr
 20 25 30
 Leu Lys Tyr Arg Arg Ser Lys Ile Ala Arg Phe Ile Glu Ser Thr Leu
 35 40 45
 Thr Leu Phe Leu Ser Lys Leu Glu Lys Ser Ser Thr Met Gln Pro Phe
 50 55 60
 Gln Ile Pro Ser Arg Thr Leu His Met Arg Asn Leu Lys Lys Lys Lys
 65 70 75 80
 Glu Leu Arg Leu Gly Lys
 85

<210>325

<211>128

<212>PRT

<213>Chlamydia pneumoniae

<400>325

Phe Phe Thr Gln Glu Asn Asn Met Ala Thr Val Ala Gln Thr Pro Gln
 1 5 10 15
 Thr Thr Gln Pro Gln Pro Ser Val Ser His Lys Ala Thr His Arg Tyr
 20 25 30
 Cys Ser Trp Val Phe Phe Lys Pro Ile Leu Val Ser Leu Gly Leu Leu
 35 40 45
 Leu Ala Ser Leu Thr Thr Leu Gly Leu Val Ile Ala Ser Gly Val Thr
 50 55 60
 Leu Ser Leu Gly Ile Gly His Cys Ser Cys Tyr Thr Asp Ser Thr Ala
 65 70 75 80
 Gly Ile Ala Leu Val Leu Ala Phe Asn His Ile Arg Gln Phe Lys Gln
 85 90 95
 Ala Arg Thr Ala Glu Leu Asn Ser Met Lys Met Ile Ser Ala Pro Ala
 100 105 110
 Ala Ala Thr Val Gln Lys Gln Lys Leu Glu Asp Arg Tyr Ser Ser Lys
 115 120 125

<210>326

<211>448

<212>PRT

<213>Chlamydia pneumoniae

<400>326

Phe Met Arg Ala Trp Glu Glu Phe Leu Leu Leu Gln Glu Lys Glu Ile
 1 5 10 15
 Gly Thr Asn Thr Val Asp Lys Trp Leu Arg Ser Leu Lys Val Leu Cys
 20 25 30
 Phe Asp Ala Cys Asn Leu Tyr Leu Glu Ala Gln Asp Ser Phe Gln Ile
 35 40 45
 Thr Trp Phe Glu Glu His Ile Arg His Lys Val Lys Ser Gly Leu Val
 50 55 60
 Asn Asn Asn Asn Lys Pro Ile Arg Val His Val Thr Ser Val Asp Lys
 65 70 75 80
 Ala Ala Pro Phe Tyr Lys Glu Lys Gln Met Gln Gln Glu Lys Thr Ala
 85 90 95
 Tyr Phe Thr Met His Tyr Gly Ser Val Asn Pro Glu Met Thr Phe Ser
 100 105 110
 Asn Phe Leu Val Thr Pro Glu Asn Asp Leu Pro Phe Arg Val Leu Gln
 115 120 125
 Glu Phe Thr Lys Ser Pro Asp Glu Asn Gly Gly Val Thr Phe Asn Pro
 130 135 140
 Ile Tyr Leu Phe Gly Pro Glu Gly Ser Gly Lys Thr His Leu Met Gln
 145 150 155 160
 Ser Ala Ile Ser Val Leu Arg Glu Ser Gly Gly Lys Ile Leu Tyr Val
 165 170 175
 Ser Ser Asp Leu Phe Thr Glu His Leu Val Ser Ala Ile Arg Ser Gly
 180 185 190

Tyr	Phe	Asp	Leu	Leu	Ser	Leu	Ile	Phe	Arg	Val	Tyr	Gln	Met	Asn	Lys
1				5					10					15	
Arg	Thr	Leu	Leu	Phe	Val	Ser	Leu	Ile	Gly	Ile	Ala	Phe	Val	Gly	Cys
		20						25					30		
Gln	Ile	Phe	Phe	Gly	Tyr	Asn	Glu	Phe	Arg	Ser	Cys	Lys	Asn	Leu	Ala
	35						40					45			
Glu	Lys	Gln	Arg	Lys	Ile	Ser	Glu	Gln	Thr	Leu	Ala	Ala	Val	Glu	Ser
	50					55					60				
Val	Gly	Leu	Ser	Val	Ala	Ser	Trp	Asp	Thr	Asp	Val	Asn	Gly	Glu	Glu
65					70					75					80
His	Lys	Asn	Asn	Tyr	Ala	Val	Arg	Val	Gly	Asp	Lys	Leu	Phe	Leu	Leu
			85						90					95	
His	Asn	Gly	Glu	Ala	Ala	Gln	Ser	Val	Tyr	Ser	Ser	Gly	Glu	Ser	Trp
		100						105					110		
Ser	Phe	Val	Asp	His	Lys	Cys	Gly	Phe	Asp	Asn	Ile	His	Leu	Ala	Leu
	115						120					125			
Tyr	Arg	Gln	Gln	Gly	Ser	Ser	Phe	Asn	Pro	Thr	Asn	Thr	Gly	Lys	Val
	130					135					140				
Phe	Leu	Pro	Thr	Asn	His	Glu	Gly	Leu	Pro	Val	Leu	Val	Val	Glu	Phe
145					150					155					160
Arg	Asn	Asn	Lys	Glu	Pro	Leu	Val	Phe	Leu	Gly	Glu	Tyr	Ala	Gln	Gly
			165						170					175	
Arg	Ile	Ser	Asn	Lys	Asp	Ser	Thr	Ile	Phe	Gly	Thr	Ala	Leu	Val	Phe
		180						185					190		
Trp	Arg	Ser	Gly	Ser	Asp	Tyr	Ile	Pro	Leu	Gly	Leu	Tyr	Asp	Ser	Arg
	195						200					205			
Glu	Glu	Lys	Leu	Val	Ser	Leu	Asp	Leu	Pro	Ile	Thr	Arg	Ala	Val	Ile

210		215		220	
Phe Gly Asn Asp Gln	Ser Ala Lys Ser Ser Asp Thr	Asn His			
225	230	235	240		
Tyr Val Leu Phe Asn Asp Tyr Met Gln Ile Ile Val Ser Glu Glu Ser					
	245	250	255		
Gly Ser Ile Glu Gly Ile Asn Leu Pro Phe Ala Ser Thr Asn Asn Lys					
	260	265	270		
Ser Ile Val Asn Glu Ile Gly Phe Asp Arg Asp Leu Ala Ser Glu Lys					
	275	280	285		
Ser Pro Glu Ala Leu Phe Pro Gly Leu Ser Ser Lys Leu Pro Asp Gly					
	290	295	300		
Gln Gln Ala Lys Asn Ser Ile Gly Gly Tyr Tyr Pro Leu Leu Arg Arg					
305	310	315	320		
Gly Leu Leu Ser Asp Ser Lys Lys Leu Leu Pro Leu Glu Tyr His Ala					
	325	330	335		
Leu Asn Val Val Ser Gly Arg Glu Leu Ala Thr Pro Val Ala Leu Arg					
	340	345	350		
Tyr Arg Val Leu Ser Tyr Thr Pro His Ser Ile Gln Leu Glu Ser Leu					
	355	360	365		
Asp Arg Ser Val Gln Lys Val Tyr Lys Leu Pro Glu Asn Pro Glu Glu					
	370	375	380		
Lys Pro Tyr Val Phe Glu Thr Ala Ile Thr Leu Thr Lys Glu Thr Glu					
385	390	395	400		
Asp Val Trp Val Thr Ser Gly Val Pro Glu Val Glu Ile Met Ser Asn					
	405	410	415		
Ala Ser Ala Pro Thr Ile Lys Tyr Arg Val Ile Lys Lys Asn Lys Gly					
	420	425	430		
Ser Leu Asp Lys Val Lys Leu Pro Lys Val Lys Glu Pro Leu Ala Val					
	435	440	445		
Arg Arg Gly Val Tyr Pro Gln Trp Ile Leu Asn Ser Asn Gly Tyr Phe					
450	455	460			
Gly Ile Ile Leu Thr Pro Leu Ser Glu Ile Ala Ser Gly Tyr Gly Ser					
465	470	475	480		
Leu Tyr Ile Ser Gly Ser Thr Ala Pro Thr Arg Leu Ser Ala Ile Ser					
	485	490	495		
Pro Lys Asn Gln Leu Tyr Pro Val Ser Lys Tyr Pro Gly Tyr Glu Thr					
	500	505	510		
Leu Leu Pro Leu Pro Lys Asp Ala Gly Thr His Arg Phe Leu Val Tyr					
	515	520	525		
Ala Gly Pro Leu Ala Glu Pro Thr Leu Lys Val Leu Asp Lys Thr Ile					
530	535	540			
Thr Gln Glu Lys Gly Glu Asn Pro Glu Tyr Leu Asp Ser Ile Ser Phe					
545	550	555	560		
Arg Gly Val Phe Ala Phe Ile Thr Ala Pro Phe Ala Ala Leu Leu Phe					
	565	570	575		
Ile Ile Met Lys Phe Phe Lys Leu Val Thr Gly Ser Trp Gly Ile Ser					
	580	585	590		
Ile Ile Leu Leu Thr Val Phe Leu Lys Leu Leu Leu Tyr Pro Leu Ser					
	595	600	605		
Ala Trp Ser Ile Arg Ser Xaa Arg Arg Met Xaa Ile Leu Ser Pro Tyr					
610	615	620			
Ile Gln Gln Ile Gln Gln Lys Tyr Lys Asn Glu Pro Lys Arg Ala Gln					
625	630	635	640		
Met Glu Ile Met Gly Leu Tyr Lys Thr Asn Lys Val Asn Pro Ile Thr					
	645	650	655		
Gly Cys Leu Pro Leu Leu Ile Gln Leu Pro Phe Leu Ile Ala Met Phe					
	660	665	670		
Asp Leu Leu Lys Ser Ser Phe Leu Leu Arg Gly Ala Ser Phe Ile Pro					
	675	680	685		
Gly Trp Ile Asp Asn Leu Thr Ala Pro Asp Val Leu Phe Ser Trp Gln					
	690	695	700		
Thr Ser Ile Trp Phe Ile Gly Asn Glu Phe His Leu Leu Pro Ile Leu					
705	710	715	720		
Leu Gly Ile Val Met Phe Leu Gln Gln Lys Val Thr Ser Leu His Lys					

730 735
 Lys Gly Pro Val Thr Asp Gln Gln Lys Gln Gln Gln Val Met Gly Asn
 740 745 750
 Met Met Ala Ile Leu Phe Thr Ala Met Phe Tyr Asn Phe Pro Ser Gly
 755 760 765
 Leu Asn Ile Tyr Trp Leu Ser Met Ile Leu Gly Val Val Gln Gln
 770 775 780
 Trp Ile Thr Asn Lys Ile Leu Asp Ser Lys His Leu Lys Asn Glu Val
 785 790 795 800
 Val Leu Asn Asn Lys Lys His Arg
 805

<210>328

<211>203

<212>PRT

<213>Chlamydia pneumoniae

<400>328

Phe Phe Met Asp Gly Val Phe Thr Tyr Asn Ile Leu Lys Arg Ser Phe
 1 5 10 15
 Lys Tyr Gly Thr Glu Ala Cys Arg Val Met Glu Ala Phe Phe Gly Phe
 20 25 30
 Leu Leu Trp Ala Ala Ile Phe Ser Trp Ile Tyr Lys Lys Lys Ile Ser
 35 40 45
 Lys Leu Thr Phe Leu Phe Leu Thr Asp Leu Cys Gly Ser Val Phe Gly
 50 55 60
 Ile Ala Ala Phe Phe Ile Arg Leu Gly Asn Phe Trp Asn Gln Glu Ile
 65 70 75 80
 Val Gly Thr Pro Thr Ser Leu Pro Trp Gly Val Val Phe Ser Asp Pro
 85 90 95
 Met Gln Gly Val Gln Gly Val Pro Val His Pro Val Gln Leu Tyr Glu
 100 105 110
 Gly Ile Ser Tyr Leu Val Val Ser Gly Ile Leu Tyr Phe Leu Ser Tyr
 115 120 125
 Lys Arg Tyr Leu His Leu Gly Lys Gly Tyr Val Thr Ser Ile Ala Cys
 130 135 140
 Ile Ser Val Ala Phe Ile Arg Phe Phe Ala Glu Tyr Val Lys Ser His
 145 150 155 160
 Gln Gly Lys Val Leu Ala Glu Asp Cys Leu Leu Thr Ile Gly Gln Ile
 165 170 175
 Leu Ser Ile Pro Leu Phe Leu Phe Gly Val Ala Leu Leu Ile Ile Cys
 180 185 190
 Ser Leu Lys Ala Arg Arg His Arg Ser His Ile
 195 200

<210>329

<211>153

<212>PRT

<213>Chlamydia pneumoniae

<400>329

Cys Thr Met Ala Arg Asn Ile Lys Tyr Phe Leu Ile Leu Phe Pro Gly
 1 5 10 15
 Ile Leu Trp Ile Ser Ala Gly Met Lys Leu Leu Leu Lys Ala Thr Ala
 20 25 30
 Ile Ala Leu Asp Pro Leu Ser Ser Phe Phe Thr Tyr Cys Leu Leu Ser
 35 40 45
 Met Val Ser Trp Gly Leu Ala Ser Leu Lys His Arg Tyr Leu Leu Ser
 50 55 60
 Lys Thr Ile Arg Lys Gln Leu Ser Leu Ser Ser Glu Phe Phe Ser Gln
 65 70 75 80
 Lys Ile Thr Trp Ile Ala Tyr Ile Lys Gln Thr Phe Ile Ser Arg Arg
 85 90 95
 Phe Leu Ile Met Val Ile Met Ile Ala Phe Ser Leu Val Leu Arg Arg
 100 105 110
 Tyr Ile Ser Asn Pro Gln Ala Leu Phe Val Ile Arg Ala Thr Val Gly
 115 120 125
 Tyr Ala Leu Ile Lys Thr Ala Ile Ala Tyr Phe Ser Lys Leu Gln Asn